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Bulletin

For the physician there is only one rule: Put yourself in the patient's place.

Lord Lister.

Rehfuss' Diseases of the Stomach

This book is literally a postgraduate course on the diagnosis and treatment of diseases of the stomach. It takes up every phase of the subject—presents the subject from every angle—bedside, gastroenterologic laboratory methods and technic, and roentgenologic examination.

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John B. Deaver has written the chapter on gastric surgery; Chevalier Jackson has written the chapter on gastroscopy; Willis F. Manges and John T. Farrell, Jr., the chapter on cholecystography; John A. Kolmer, gastric bacteriology; J. Alexander Clarke, allergy, and Louis H. Clerf, diseases of the esophagus. There is a valuable group of diet lists with directions.

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Another SAUNDERS BOOK on Page 3

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TOBACCO ANGINA PECTORIS

ELI MOSCHCOWITZ, M.D.

NEW YORK

That tobacco smoking may cause a clinical condition closely resembling true angina pectoris due to coronary or aortic disease is more or less well known. The difficulty in the differential diagnosis between the two conditions may be increased when the patient shows some objective evidence of coronary and aortic disease; in such instances, one cannot speak strictly of "tobacco heart" but of the effect of tobacco on an already existing cardiovascular disease. In both instances, the effect of long continued and complete abstinence is profound; but the differentiation between tobacco angina and angina pectoris due to organic disease is possible in the last analysis only by noting whether suffering ceases with abstinence. Even before this event, a differentiation may sometimes be made by taking into consideration certain clinical manifestations peculiar to tobacco angina.

REVIEW OF THE LITERATURE

Strangely, there are not many first-hand observations on the effect of smoking on the heart. Most of the remarks in current textbooks bear the characteristics of literary legacies.

Allbutt [1] mentions cardiac irregularity and even delirium cordis. Palpitation is common, especially among young smokers. Most significant is Allbutt's observation that smoking may cause violent angina, which is distinguished from true angina by "the excessive violence and length of the attacks." He also says that the blood pressure rises during smoking, and falls below normal after cessation. Willson [2] describes two cases of unusually severe anginoid pain which ceased after smoking was discontinued. Külbs [3] describes arrhythmia, extrasystoles and tachycardia, especially in the young. After the age of 50, there may arise symptoms of angina and aortalgia. In the interval between attacks, bradycardia is more common than tachycardia. The blood pressure is usually normal. The orthodiagram shows a heart of normal size, while the aorta is enlarged.

John [4] found an increase in both the systolic and the diastolic pressures during smoking, which is followed on cessation by a fall, lasting two hours. Favager [5] noted arrhythmia, bradycardia or tachycardia, precordial oppression, dyspnea, cardiac asthma, cyanosis and even Cheyne-Stokes respiration. He reports a fatal case of "cardiac paralysis" in which the autopsy showed "dilatation and fatty heart." I doubt whether tobacco caused this death.

Neuhof's [6] report is apparently the only clinical one in which some of the modern methods of cardiologic study were introduced. He observed several cases of extrasystoles (usually auricular), one case of flutter and one of fibrillation. He also reports in detail a case of sino-auricular block. He quotes Pezzi and Clerc, who studied the effects of nicotine on cardiac rhythm in animals. They divided these into an initial bradycardia and a later tachycardiac phase. In the former, they occasionally noted auricular arrest with ventricular arrhythmia and less frequently auricular fibrillation. With the tachycardia, they observed lessened auriculoventricular conduction time, retrograde conduction, auricular extrasystoles or incomplete auriculoventricular dissociation. Cushny [7] showed that experimental nicotine injection "disturbed cardiac rhythm mainly by a neurotropic influence upon the ganglionic terminations of the vagus and sympathetic nerves." There may therefore be two opposite effects, slowing or acceleration, depending on the preponderance and selective action on the two nerves. In a recent scholarly paper, Rolleston [8] says that he has seen two severe cases of anginoid pains in physicians, and that the minor degrees of anginoid pains, such as substernal oppression and tightness on exertion, are not uncommon. He quotes Brunton to the effect that a sustained low blood pressure, in the absence of evidence of tuberculosis, usually spells excessive smoking.

One must be cautious in applying the experimental results of injections of nicotine to the effects of smoking on the human organism. Even assuming that nicotine is the only offending ingredient of tobacco, tobacco smoke also contains, according to Gies, Kahn and Limerick,[9] collidine, aldehydes and carbon monoxide. Apparently there is a difference in the content of these substances in different varieties of tobacco smoke. Armstrong [10] finds that cigaret smoke contains 1 per cent of carbon monoxide, while a quickly smoked Havana cigar contains 8 per cent. Dixon [11] has demonstrated that the blood of cigaret smokers may contain as much as 5 per cent of carbon monoxide. According to Rolleston, the smoke from pipes contains the most nicotine, from cigars the next largest quantity, and from cigarets the least. Dixon believes that the effects of cigaret smoking are chiefly due to carbon monoxide, while the effects from cigars are the result of nicotine.

1. Allbutt, T. C.: Diseases of the Arteries Including Angina Pectoris, New York, The Macmillan Company, 1915.
2. Willson: New York M. J. **102**: 541, 1915.
3. Külbs, F.: Ztschr. f. klin. Med. **99**: 258, 1923.
4. John: Ztschr. f. exper. Path. u. Therap. **14**: 352, 1913.
5. Favager: Wien. med. Wchnschr. **28**: 497, 1914.
6. Neuhof, Selian: Sino-Auricular Block Due to Tobacco Poisoning, Arch. Int. Med. **17**: 659 (May) 1916.
7. Cushny, A. R.: Textbook of Pharmacology and Therapeutics, Philadelphia, Lea & Febiger, 1924.
8. Rolleston, Humphrey: Lancet **1**: 961 (May 22) 1926.
9. Gies, W. J.; Kahn, M., and Limerick, O. U.: New York M. J. **113**: 809 (June 1) 1921.
10. Armstrong, H. E.: Brit. M. J. **1**: 992 (June 24) 1922.
11. Dixon, W. E.: Brit. M. J. **2**: 819 (Nov. 19) 1921.

All are agreed that much depends on the rapidity of smoking, whether the smoke is inhaled, and whether the pipe, cigar or cigaret is smoked to the bitter end. In the latter case, a large deposition of nicotine occurs. Baumberger [12] has studied the effects of carbon monoxide in tobacco smoke.

The dosages and methods of absorption in the human organism are probably of considerable consequence. Fürbringer [13] regards nicotine as the most toxic substance in tobacco smoke. It varies in quantity between 2 and 7 per cent. The fresher the tobacco, the richer is the distillation product in nicotine. He asserts that the smoke from a pipe is freer from nicotine than that of a cigaret, and that the inhalation of smoke into the bronchi increases the absorption of nicotine eight times. Heinz [14] says that nicotine poisoning is more common in smokers of Havana tobacco, because the leaf is greener and fresher. In my experience, it has been of little consequence whether the tobacco is Havana or otherwise. The majority of my cases have resulted from the smoking of cigarets, made largely of Turkish or Egyptian tobacco.

REPORTS OF CASES

CASE 1.—A surgeon, aged 61, had smoked cigarets for forty years, and in the last twelve years or more he had consumed about twenty a day. He felt in perfect health until March, 1925, when, early one morning, he was awakened by a violent precordial pain. The pain lasted about a minute or more, and then ceased entirely. During the attack there was no change in the facial color or pulse rate; arrhythmia, dyspnea or change in the normal heart sounds did not occur. Attacks recurred frequently during the day, and were relieved for a time by a hypodermic injection of morphine. From that time on, until they ceased rather dramatically in May, 1925, hundreds of similar attacks occurred. For a while they came on capriciously, for instance, while the patient was at complete mental and physical rest. Usually they awakened him out of a sound sleep at 5 or 6 a. m. Strangely enough, while in the operating room, he had few or only slight and transient attacks. Later, the attacks seemed to arise more frequently after exertion or mental tension. Sometimes the attacks would come on with almost startling rhythmicity, for instance, every six or seven minutes, so that one could predict almost to the second when another attack would arise. The character of the attacks did not vary from the first one. Most of them were agonizing; the pain was localized to the precordial region and lasted many minutes. Even repeated doses of morphine proved of no avail. Later, the patient admitted that there was radiation of the pain down the left arm to the tip of the fingers.

Physically, the heart and arteries did not show any change either during or between the attacks, except for a moderate radial thickening, even less than one would expect at that age. The blood pressure averaged 130 systolic and 75 diastolic. A complete orthodiagraphic and electrocardiographic examination by Dr. B. S. Oppenheimer did not show any change except a moderate dilatation of the aorta, incident to the patient's age. Weeks passed, and although smoking was completely abandoned, the attacks persisted with practically the same frequency and severity as before. Various therapeutic measures were instituted, but aside from the nitrites and narcotics nothing afforded relief. May 20, 1925, there came a memorable day in which the attacks were of fearful violence and practically continuous—a status anginosus. Nothing afforded relief, even after three-fourths grain (0.05 Gm.) of morphine sulphate administered in divided doses during the night. In the morning, the pain was gone, and from that day to this (June, 1927) the patient has been free from any recurrence.

For the first few months after this dramatic relief, the patient had an occasional "stitch" in the apex region, especially after exertion or mental strain. For the past year there has not been any sensation whatever, except occasionally in a smoke-laden atmosphere. He complains of some dyspnea on exertion, but his color is excellent, and physical examination of the heart does not reveal anything abnormal. The blood pressure is 135 systolic and 85 diastolic; the urine is normal.

In commenting on this case, it is necessary to emphasize the following points: (1) the long history of cigaret smoking; (2) the capricious onset of the attacks, usually at rest; (3) the extreme violence and long duration of the pain; (4) the occasional startling rhythmicity of the attacks; (5) the absence of all change in facial color; (6) the absence of physical signs or change in the pulse during the attack; (7) the absence of all myocardial change as shown by the electrocardiogram; (8) the freedom from attacks after only three months' abstinence from smoking, and (9) the presence of a certain degree of sensitization, so that slight pain arises when the patient is in an atmosphere of tobacco smoke.

Those familiar with the conventional angina, the result of coronary or aortic disease, need hardly be reminded that many of the features described in this case are unusual. I refer to the absence of the change of color so characteristic in true coronary disease, to the capricious onset of the attacks and their rhythmicity and, above all, to the unusual violence and duration of the pain. The pain in true angina is certainly bad, but I have never witnessed the agony suffered by this patient. While a change in the character and rhythm of the pulse and heart action is usual in true angina, its absence is not infrequent, so that a differentiation on this ground is only relative. Failure to find electrocardiographic evidences of intraventricular conduction disturbance, after so lengthy and severe a period of attacks, speaks somewhat against any coronary disease. (It is known that occasionally coronary occlusion may occur, and subsequently no characteristic electrocardiographic evidence may be found.)

The one point that seemed to indicate true organic disease and not a toxic state was the fact that the attacks did not subside or even show a tendency to abate after cessation of smoking. They ceased only about three months later. This, however, as the cases to be cited will show, is the usual phenomenon—a fact important to remember. The factor indicating sensitization I shall discuss later.

CASE 2.—A merchant, aged 41, a smoker of Turkish cigarets and Havana cigars since the age of 12, stated that about one week before Aug. 21, 1923, he awakened one morning with a violent precordial pain radiating to the left arm. The pain disappeared, to return one week later at 2 a. m., when it awakened him from a sound sleep.

The patient had had syphilis twenty years before; he had been adequately treated, however, and the last Wassermann test, about a year before, had been negative. He had been treated for high blood pressure and albuminuria for some years previously.

The patient was sparely built, 150½ pounds (68.3 Kg.) in weight, and 5 feet 6 inches (167.6 cm.) in height. The apex beat was in the sixth space, nipple line, and there were no abnormal sounds or murmurs. The pulse was 82, and the blood pressure 140 systolic and 100 diastolic. There was no dyspnea. The urine was normal.

Smoking was forbidden, but slight attacks of precordial pain persisted until Sept. 29, 1923, when the patient returned, saying that all pains had completely disappeared.

In March, 1924, he again began to smoke from eight to ten cigarets a day. June 19, he reported that he had substernal pain, especially on walking. Smoking was again stopped, and the pain disappeared within a few weeks. Nov. 17, 1925, he again complained of substernal pain on walking, and slight dyspnea. The blood pressure throughout these months remained about the same—from 135 to 155 systolic and 100

12. Baumberger, J. P.: J. Pharmacol. & Exper. Therap. **21**: 23 (Feb.) 1923.
13. Fürbringer: Deutsche med. Wchnschr. **52**: 2021, 1926.
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diastolic. The urine remained free from albumin. The physical examination of the heart did not reveal any abnormality. The pains again disappeared for some weeks. In January, 1926, the patient was allowed to try "nicotine-free" cigarets, of which he smoked from ten to twelve a day. April 24, he reported that he had slight attacks of substernal pain radiating down the left arm. I saw him in a number of these attacks, and at no time was there a change in color or in cardiac rhythm. The blood pressure was 125 systolic and 90 diastolic. Despite advice, he continued to smoke "nicotine-free" cigarets for a few days. April 28, he reported that he continued to have severe attacks. The attacks came usually without warning and occurred as often during complete rest as after exertion, or when the stomach was empty as after a full meal. May 29, he asserted that he had had only one slight attack during the preceding week.

In September, 1926, the patient was referred to Dr. B. S. Oppenheimer in consultation, who reported, after examination, that the apex beat was visible in the sixth space, about 13 cm. from the midline, and that the left border of the heart was well outside the nipple line. The heart rate was about 92 beats a minute. The blood pressure was 126 systolic and 96 diastolic. The electrocardiogram showed a left ventricular preponderance, as indicated by inversion of the main deflection in lead 3. The Q-R-S complexes in leads 1 and 3 were slurred, and in lead 2 they were both notched and slurred. The heart rate was about 90 beats a minute. The T wave in lead 1 was slightly inverted, and in lead 3 there was partial inversion of the T wave. These conditions in the T wave were probably due to digitalis.

The teleoroentgenogram taken at the same time showed an enlarged heart, with marked hypertrophy of the left ventricle. The heart was duck-shaped, the left border being sharply outlined and the apex rounded. The cardiac dimensions were as shown in table 1.

These dimensions were abnormal, the total transverse diameter of the heart being greater than half the transverse diameter of the thorax taken at the base of the lungs. These changes are characteristic of hypertension. The lung markings were increased.

While the causal relation between smoking and the anginoid attacks is fairly clear, one cannot escape the thought that this patient already had coronary or aortic disease. The history of syphilis and hypertension, the enlarged heart, the shape of the heart shadow, and the electrocardiographic evidence all bespeak such disease. The normal systolic pressure may indicate that severe

TABLE 1.—*Cardiac Dimensions in Case 2*

	Cm.
Median to right	4.6
Median to left	11.7
Total transverse diameter of heart	15.3
Transverse diameter of thorax	29.7
Transverse diameter of aorta	5.1

myocardial injury had already occurred. The relative increase in diastolic pressure shows that there was still some increased peripheral resistance. At all events, extraordinary compensation must have taken place, for today the patient looks, feels and acts well.

This is not an instance, strictly speaking, of a tobacco heart. Rather it is illustrative of the effects of smoking on an already injured heart; in other words, the case is one in which tobacco was the exciting cause in an organic heart condition potential of true anginoid pains. The proper evaluation of the various factors in this case remains entirely for the future.

CASE 3.—A lawyer, aged 52, who first consulted me, Feb. 12, 1926, had smoked daily from twelve to eighteen strong Havana cigars with an occasional pipe ever since the age of 25; he stated that he chewed his cigars while smoking. He complained that for the preceding two weeks he had had attacks of violent and prolonged precordial pain radiating down the left arm. At first the pain came on during rest; latterly, the pain came after walking a short distance. Belching sometimes relieved the pain.

For his height he was slightly overweight (165 pounds or 74.8 Kg.). His color was good. The apex of the heart was in the fifth space, axillary line; the outlines by percussion were apparently normal and the sounds were clear. The blood pressure was 150 systolic and 90 diastolic. The urine did not show any albumin or sugar.

The patient was sent to Dr. B. S. Oppenheimer in consultation, who reported that the electrocardiogram showed a normal sinus rhythm, with a left ventricular preponderance, as indicated by inversion of the main deflection in lead 3. The P wave and T wave in lead 3 were isoelectric. However, there

TABLE 2.—*Cardiac Dimensions in Case 3*

	Cm.
Median to right	4.2
Median to left	9.8
Total transverse diameter of heart	14.0
Transverse diameter of thorax	29.6
Transverse diameter of aorta	4.7

were no electrocardiographic evidences of myocardial or coronary disease, but neither of these could be ruled out.

The teleoroentgenogram showed a heart in the normal position. The left ventricle was slightly hypertrophied and the ascending aorta was somewhat dilated. The cardiac dimensions were as shown in table 2.

The lung markings were increased. Although the foregoing observations are not of great significance in a man of 52 years of age, Dr. Oppenheimer considered that because of the anginal pain they might be of real importance, especially the dilatation of the aorta.

The attacks of pain slowly diminished in intensity and severity. March 6, 1926, the patient had only slight pain on walking. The pains ceased entirely about the beginning of April, 1926, and the patient has been free from pain ever since. He feels entirely well.

The main points in this history worthy of emphasis are these: 1. A man of 52, a heavy smoker of Havana tobacco, is suddenly stricken with severe anginoid attacks. 2. There has not been any previous hypertension. 3. The attacks are of unusual violence and prolonged, and occurred, especially at the onset, during perfect rest. 4. The attacks ceased only after seven weeks' abstinence from tobacco. 5. There were no changes in the heart beyond the normal range for a man of his age.

This case is submitted as one of pure tobacco heart. There is every reason to believe that the man will remain well, provided he continues to abstain from tobacco.

With the present spread of smoking among women, it was not surprising to encounter a case of tobacco heart in a woman.

CASE 4.—K. B., a woman, aged 35, had smoked an average of between twenty and thirty Turkish cigarets a day, and had always been in perfect health. March 14, 1926, while lying quiet, she was suddenly seized with a violent precordial pain radiating down the left arm. Her color was good, and the pulse rate was 78 and regular; the heart showed normal rhythm, outline and sounds. Smoking was forbidden. These pains recurred frequently in the course of the next week, but not so violently, and usually when the patient was at rest. There was no dyspnea. A sense of general bodily weakness supervened for which the patient was placed in bed for one week. The pains continued almost daily with gradually diminished severity, and June 4, 1926, she reported that they had ceased. The blood pressure was 125 systolic and 95 diastolic. The urine was normal. When last seen, in June, 1927, she was perfectly well.

A woman, aged 35, a rabid cigaret smoker, is seized with anginoid pains of marked severity. During the attacks there is no change in color. Examination of the heart does not reveal anything abnormal, and there is no change in function during the attack. The attacks do not cease until eight weeks after the cessation of smoking.

This case is also submitted as an instance of genuine tobacco heart.

COMMENT

I have seen two other cases in which anginoid pains ceased after the use of tobacco was stopped, but the period of observation has been too short to warrant a report at this time.

I do not intend to convey the impression that anginoid pains represent the only manifestation of tobacco heart. I recall cases of moderate tachycardia that seemed to be due to abuse of tobacco, and about three years ago I witnessed marked cardiac irregularity, due to extrasystoles, which disappeared within a short time after tobacco was forbidden.

SUMMARY

In four patients who suffered from anginoid pains, the pain ceased when they no longer smoked. The youngest patient was 35 and the oldest 62, the average age being somewhat above 50. One of the four was a woman. They had all smoked for many years previous to the seizures. Two smoked only Turkish cigarets; two smoked strong Havana cigars with occasional pipes.

The patients all suffered from pains closely resembling those of angina pectoris resulting from true coronary or aortic disease. The pains of tobacco heart have, however, the following characteristics distinguishing them from those resulting from coronary or aortic disease: 1. The pains are more intense and of longer duration in tobacco angina than in true angina. 2. The pains are more likely to arise during complete rest, and may even awake the patient from a sound sleep. In true angina, as is well known, the attacks are usually induced by exertion, especially after a meal, and by emotion. In these particulars, the pain of tobacco poisoning resembles the true neuralgias.

A prominent feature is the apparent sensitization that occurs. In a number of my patients, a greater or lesser degree of pain was induced by mere puffing of a cigaret, or even when the patient was in an atmosphere of tobacco smoke. Whether or not this is a true anaphylactic phenomenon cannot be said. Rolleston also calls attention to the frequently acquired susceptibility.

In three of the patients there was no objective evidence of cardiac or vascular disease, as determined by modern methods of examination; nor were there in the interval between the attacks or subsequently any subjective evidences of such disease. As all subjective phenomena were not relieved by any means except the cessation of smoking, these three cases are submitted as true examples of tobacco heart.

In the other case, there was evidence of disease or disturbed function, as shown by blood pressure determinations, teleoroentgenograms and electrocardiographic determinations. In these three cases the electrocardiographic tracings showed some changes suggestive of the intraventricular conduction disturbance, a condition associated with the clinical syndrome of angina pectoris. There are a number of ways in which the use of tobacco may be related to this condition:

1. There may not be any relation, and the anginoid pains may have ceased not because but in spite of the discontinuance of smoking. That anginal pains may cease in true coronary or aortic disease is well known, especially when infarction has occurred or when myocardial failure has supervened. In such cases, a previous hypertension drops or the tension becomes normal.

Such a contingency is not likely in any of my cases, for none of my patients subsequently revealed any of those grave subjective or objective signs of myocardial failure generally associated with the terminal phases of coronary infarction or myocardial failure. All these patients are now practically well. It will be interesting to follow their lives, for it is only in this way that a correct answer to this problem can be given. The mere cessation of symptoms after discontinuance of smoking is not final proof that tobacco was the cause, except in the one case in which all the symptoms recurred at three separate intervals soon after the resumption of the old habits, and gradually ceased after the discontinuance of smoking. In such a case, one can safely speak of cause and effect.

2. The tobacco may have caused sufficient sclerosis of the coronary arteries or aorta to induce angina. Ever since the work of Huchard,[15] nicotine has been supposed to cause arteriosclerosis. One of the evidences submitted has been the supposed development of arteriosclerotic lesions in rabbits by the injection of nicotine.[16] This demonstration has not been well controlled, for arteriosclerosis of the aorta is extremely common in rabbits. Altogether, the assumption of the deleterious action of tobacco on the heart rests on an extremely unstable foundation, and Sir Clifford Allbutt, who was extraordinarily interested in this question, said in almost his last writings that the effect of tobacco on hyperpiesia and atheroma was negligible.

3. The use of tobacco may have caused subjective disturbance in a patient whose heart was seriously injured; in other words, the tobacco is merely the exciting cause in a patient with potential angina. This is by far the most likely view and is a strong argument for forbidding tobacco to patients with true coronary or aortic disease entirely and forever. My experience has shown that it serves no purpose to advise mere cutting down; there should be either complete abstinence or no reduction whatever.

What the lesion is, if any, that brings about the pain is entirely a matter for speculation. Whether the problem is the same as that involved in true angina cannot be answered. As there is evidence according to Wiggers[17] that tobacco causes constriction of the blood vessels, it is possible that this constriction may be the mechanism involved.

CONCLUSIONS

1. Tobacco smoking may cause symptoms closely resembling the angina pectoris of coronary or aortic disease.

2. The variety of tobacco used apparently makes little difference.

3. The pain of tobacco heart is usually more intense and of longer duration than that of true angina, and is usually accompanied by slight or no disturbance of heart function.

4. There is strong evidence that sensitization occurs in patients who have once had tobacco heart.

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16. Adler: J. M. Research **8**: 309, 1902.
17. Wiggers, C. J.: Modern Aspects of Circulation in Health and Disease, ed. 2, Philadelphia, Lea & Febiger, 1923.

5. There are two varieties of tobacco heart: (*a*) those in which evidence of cardiac injury is not present, and (*b*) those in which the signs are suggestive of the intraventricular conduction disturbance associated with coronary or aortic disease. In the latter, the tobacco is probably the exciting cause of the anginoid pains. The use of tobacco in these patients is therefore absolutely contraindicated. What the ultimate result will be is a problem reserved for further observation.

6. To limit the use of tobacco in patients suspected of tobacco poisoning is not enough. Withdrawal of tobacco should be complete.

7. Anginoid pains of tobacco origin do not cease promptly after withdrawal. They may continue many weeks or even months.

8. The mechanism of tobacco angina is not known. It is probably due to the constrictor action of tobacco on the blood vessels. It resembles also the pains characteristic of the true neuralgias.

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INTRAPERITONEAL USE OF DEXTROSE IN TREATMENT OF DISEASES OF CHILDREN *

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When an infant suffers from a severe nutritional disturbance there is often a deficiency of food and water. Water is lost as a result of diarrhea and evaporation from the lungs, and food is not assimilated for obvious reasons. The indication for the treatment of these infants with severe nutritional disorders is, therefore, to supply the lacking elements. Food and water must be given.

Vomiting often hampers the giving of water by mouth. Hypodermoclysis is painful and its possibilities are limited. Fluids administered by rectum are not retained, and the small veins make intravenous injections impracticable. Blackfan and Maxcy [1] first advocated intraperitoneal injections as a means of supplying the desired fluid. The method of intraperitoneal injections is a practical one, when it is not possible to give enough fluid by mouth on account of vomiting and diarrhea. Much larger amounts of fluid may be given intraperitoneally than intravenously or subcutaneously. The procedure also throws less strain on the heart than does intravenous injection.

Intraperitoneal injection also furnishes a method of supplying food to the child. Dextrose readily meets this requirement and was soon added to the salt solution.[2] That the use of dextrose was well justified as a food in nutritional disorders has been substantiated by many workers.[3]

It now appeared that an ideal form of treatment had been involved, namely, supplying fluid and food, as dextrose, intraperitoneally. Unfortunately, many undesirable results from the intraperitoneal injections of dextrose began to be observed. These ranged from a simple abdominal distention [4] to a rise in temperature, cyanosis, and weak pulse.[5] These results were so distressing that Tenzer and Ebel [6] considered the intraperitoneal injection of dextrose an heroic measure. So many reactions of this kind resulted from so-called dextrose shock that in 1925 intraperitoneal injections of dextrose were given up in this hospital until some method of preventing them could be found.

Williams and Swett [7] found that dextrose solutions rapidly became acid on autoclaving, or on standing several hours at room temperature. For example, one of p_H 6.20 after standing in the laboratory for twenty-four hours was of a p_H of 5.15 and, after forty-eight hours, of 4.15. They argue that as the blood has a p_H range of from 7.3 to 7.5, a hydrogen ion concentration of blood or tissues above or below these figures is not compatible with life. When solutions of higher or lower hydrogen ion concentration than that of the blood are introduced into the circulation, the normal buffer substances of the blood serve to correct the faulty reaction and thus protect the body against injury. If the solution is injected in a greater amount than the blood can buffer, or at a rate in excess of the capacity of the blood to neutralize it, then a severe reaction or death results.

Stoddard,[8] following this reasoning, buffered dextrose solutions with a phosphate solution and did not obtain any bad results following intravenous injections. To apply this method to intraperitoneal injections, the following experiments were carried out:

PROCEDURE

Dextrose solutions, after boiling for twenty minutes or autoclaving, were allowed to stand at laboratory temperature. After various lengths of time, they were injected intraperitoneally into dogs. The resulting reactions increased in intensity with the length of time following sterilization. Three hours after sterilization of the dextrose solution, reactions would develop following injection. These varied from a simple distention to severe shock in specimens that had stood a longer time.

Buffering the solution was successful in a majority of cases, but as a few cases of nausea developed, it was decided to overcome the tendency to acid formation in another way. This was done by autoclaving the dextrose until it was dry, and then adding sterilized water to it. There were no effects of any kind in the dogs injected intraperitoneally with dextrose prepared in this way.

METHOD OF PREPARATION

Chemically pure dextrose is used. Five grams is accurately weighed and placed in a pyrex tube 150 by 20 mm. These tubes must be thoroughly dried by a hot blast and by baking for forty minutes at 100 C. The tube is then plugged with a piece of gauze 20 by 20 cm., four thicknesses being used. A sterile "four" makes an ideal plug. This gauze is placed over the

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2. Mitchell, A. G.: Intraperitoneal Injections in Infancy, Arch. Pediat. **39:** 291 (May) 1922. Gittings, J. C., and Donnelly, J. D.: The Clinical Value of Intraperitoneal Injections of Salt Solution, Am. J. Dis. Child. **23:** 124 (Feb.) 1922. McLean, Stafford; and Lang, C. A.: Fluid Injections in Dehydrated Infants, ibid. **19:** 359 (May) 1920.

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5. Maches, S.: Intraperitoneal Transfusion, München. med. Wchnschr. **68:** 1082 (Aug. 26) 1921.

6. Tenzer, O., and Ebel, A.: Intraperitoneal Transfusion, Monatschr. f. Kinderh. **33:** 295 (March) 1926.

7. Williams, J. R., and Swett, Madeline: Hydrogen Ion Concentration Studies, J. A. M. A. **78:** 1024 (April 8) 1922.

8. Stoddard, J. L.: The Avoidance of Intravenous Glucose Reactions, Boston M. & S. J. **191:** 1121 (Dec.) 1924.

top of the tube and pushed down into the bore for about 10 cm. A small piece of cotton is placed at the bottom of the cartridge formed, and about 5 Gm. of calcium chloride is poured above this. The gauze is now twisted well into the tube, enough being left at the top so that it can be extracted easily.

After these tubes have been autoclaved at 15 pounds pressure for twenty minutes, they are ready for use. They will keep for at least fourteen days, which is the longest time we have ever allowed them to stand.

Tubes should not be used which show any brown spots in the dextrose, or moisture in the plug.

One hundred cubic centimeters of double distilled water is added to the dextrose when ready for use, and a 5 per cent solution is thus obtained. It is our custom to mark each tube at its capacity of 100 cc. and to pour the water directly into the tube. It was found that a higher concentration than 5 per cent tended to draw body fluid into the abdominal cavity, which corresponded to the observations of Narat.[9] Obviously, this would be undesirable in a dehydrated child.

The usual sterile procedure is used, and the injection into the abdomen [10] is made at the usual point.

RESULTS

Solutions of dextrose prepared in this manner were first given intraperitoneally in cases of intoxication with dehydration. They were so uniformly successful that we have gradually extended their use to many other conditions. Talbot [11] states that the dextrose reserve of the body lasts twenty-four hours. After this, then, when fat is used, as there is now insufficient sugar for the oxidation of fats, ketosis results. Ketonic acids combine with circulatory bases, and a diminution of the available alkali reserve results. The carbon dioxide combining power of the blood is reduced and a compensated acidosis results. When the acidosis becomes more severe and the patient has air hunger and cherry red lips, there is an uncompensated acidosis which is best corrected by the administration of dextrose.

We therefore give dextrose in any disturbance in which there is a question of insufficient nourishment, besides the nutritional disturbances, in intoxication and marasmus, in pneumonia, both lobar and bronchial, in pyelitis, and in postoperative conditions.

In no cases have we had any disturbances of any kind following the intraperitoneal injections. This method has now been in use for the last nine months, which we judge to be ample time for a fair trial.

The intraperitoneal injections are never given in larger quantities at one injection than 100 cc. However, as 100 cc. is only about half the usual fluid intake of a child at one feeding, the injection, to be effective, must be repeated frequently. It is rather astonishing how rapidly the fluid is absorbed. It is usually believed that twelve hours [12] is the minimum, but in one case we gave a child six intraperitoneal injections of 5 per cent dextrose daily for four days.

CONCLUSIONS

1. A 5 per cent solution of dextrose may be given intraperitoneally without reaction of any kind, if the dextrose is prepared by dry sterilization.

2. The use of dextrose intraperitoneally may be extended to some acute infections and to postoperative conditions as well as the nutritional disturbances.

3. To be effective, the dextrose should be given in 100 cc. quantities, repeated frequently.

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POSTVACCINATION TETANUS AND ITS PREVENTION

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Tetanus as a complication of vaccination against smallpox, while rare, has occasionally developed in the United States. During the past fourteen years cases have occurred in thirty-two states and in the District of Columbia. The complication, however, is almost unknown in Europe and the same condition appears to be true for other portions of the world, although so far as our information goes traumatic tetanus occurs everywhere.

CHARACTER OF THE ATTACK

The symptoms of postvaccination tetanus do not differ from those of severe traumatic tetanus. The onset is usually from eighteen to twenty-four days subsequent to the vaccination. The first symptoms noted may be difficulty in swallowing or in opening the jaws, or stiffness of the muscles of the back or limbs. Trismus, general spasticity, opisthotonos and generalized convulsions usually develop rapidly. From 75 to 80 per cent of the cases prove fatal, many of them within twenty-four hours from the onset of symptoms.

SOURCE OF THE INFECTION

In 1917, McCoy and Bengtson [1] demonstrated the presence of tetanus organisms on bone-point scarifiers such as had been employed in vaccinating a number of persons who developed postvaccination tetanus. In 1925, the same organism was demonstrated in bunion pads such as were found to have been used in several cases in which the complication [2] had developed. Extensive tests of commercial vaccine virus both by the manufacturers and by the Hygienic Laboratory have uniformly failed to demonstrate the presence of *B. tetani.* Various methods that were found capable of detecting the presence of small quantities of tetanus spores when intentionally introduced were employed. Needles, tubes, dressings and antiseptics have been repeatedly examined for tetanus, but with negative results except in the two examples noted. One is therefore left to conclude that the infection is due to accidental contamination of the lesion.

In this connection it is of interest to note that those states which have had the greatest number of cases of postvaccination tetanus are not those which have the highest rates from traumatic tetanus. There is, however, considerable epidemiologic evidence which indicates that special conditions are necessary before postvaccination tetanus will develop, even though the specific organism is present in the lesion. For instance, there is no apparent reason for concluding that tetanus organisms, whatever their source, should never gain entrance to secondary vaccinations, yet without excep-

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2. Armstrong, Charles: Tetanus Following the Use of Bunion Pads as a Vaccination Dressing, Pub. Health Rep. **40**: 1351-1357 (June 26) 1925.

tion the cases for which the data are available have followed primary "takes." Likewise, reference to the accompanying table will show that the ninety-eight cases which we have investigated have in most instances followed large insertions, and that in every case the vaccination area was covered for all or a portion of the active course of the infection by some type of shield or dressing.

The information set forth in the table is not susceptible of statistical treatment, since the relative number of persons vaccinated by various methods in the United States during the period of this study is not known. However, it is known that a considerable number have been vaccinated with small insertions and without the use of dressings, and it would seem that the absence of postvaccination tetanus in this group is significant. Moreover, local studies have been made wherein the numbers vaccinated by various methods could be determined and it has been found that a disproportionate number of cases of postvaccination tetanus followed certain vaccination procedures which tended to produce severe local takes.

DISTRIBUTION OF CASES BY SEX, AGE AND TIME OF OCCURRENCE

The fact that postvaccination tetanus tends to occur only after primary vaccinations explains the preponderance of cases in the autumn among children from 6 to 7 years of age, since in this country primary vaccinations are most commonly performed when a child enters school. It seems to be questionable whether or not this is the best time to perform first vaccinations, since children of this age usually play about the streets and gardens and their sanitary sense is largely undeveloped. Boys are somewhat more subject to the complication than are girls. In Europe, with its relative freedom from postvaccination tetanus, primary vaccinations are largely performed during the first year of life. It is a well established fact that infant vaccinations tend to be less severe than do primary "takes" in later life. Moreover, the infant is confined to an environment less likely to be contaminated with tetanus organisms, and in addition is protected against smallpox during a period in which he would otherwise be susceptible. Secondary vaccination performed on entrance to school, as is done in most European countries, would of course be almost without risk.

INFLUENCE OF SHIELDS AND DRESSINGS ON THE "TAKE"

The harmful influence of shields and dressings is apparently not fully realized by all vaccinators. Such appliances, usually held by adhesive straps, tend, when swelling occurs, to restrict the flow of blood and lymph, thus leading to stasis. This effect is especially marked when shields are employed, since they must be rather snugly applied, as otherwise they move and come in contact with and injure the lesion. Artificial coverings, moreover, retain heat and moisture, which tend to soften the vesicle and thus lead to its rupture and the exudation of serum or pus. This accumulation of moist exudate tends to produce maceration and constitutes a medium for the growth of proteolytic bacteria. Even though the original insertion be small, it will usually develop under these conditions until it fills the shield. Gauze dressings become embedded in the exudate, and when they are removed the vesicle is ruptured. Under the influence of dressings, especially when neglected, a foul smelling necrotic ulcer may develop, which seems to be favorable to the development of tetanus, since a foul odor was noted prior to the onset of tetanus in approximately 75 per cent of the cases investigated as to this point. We have not encountered such foul smelling lesions in vaccinations treated openly. It is of interest to note also that we have failed to find any reference to tetanus complicating smallpox, a disease in which the body may be covered with lesions resembling a vaccination, but which are of necessity treated openly.

INFLUENCE OF DRESSINGS IN EXPERIMENTAL POSTVACCINATION TETANUS

Francis,[3] in 1914, attempted to produce postvaccination tetanus in eight monkeys each vaccinated in five places with a virus heavily contaminated with heated tetanus spores. Severe "takes" resulted, but tetanus did not develop. Two calves vaccinated on the abdomen and thighs with a similar mixture likewise failed to develop the disease. In 1915, Anderson [4] tried a similar experiment, using guinea-pigs, but with uniformly negative results. Dressings were not employed in these attempts. In view of the epidemiologic evidence, as shown in the table, it was therefore deemed desirable to attempt again to produce the complication experimentally, employing various types of commercial shields and dressings.

Vaccination Methods Used in Cases Developing Tetanus

Method of Insertion	Type of Dressing Used							
	Shields	Gauze	Bunion Pads	Gauze and Shield	No Dressing Early; Shields Later	Adhesive Bandage	No Dressing	Total
Abrasions (¼ to ⅝ inch) or scarifications	30	22	13	1	1	..	..	67
Multiple linear incisions, 2 to 12 in one locality	7	6	2	2	1	..	..	18
Single linear incision	2	1	..	1	..	1	..	5
Unknown	5	3	..	..	..	..	..	8
Total	44	32	15	4	2	1	..	98

Experiments with Monkeys.—Twenty-three monkeys were vaccinated with a single insertion of vaccine virus heavily contaminated with *B. tetani*. All the lesions were covered for the first eighteen hours. At the end of this period the dressings were removed from the control animals, while they were left undisturbed in the remainder. Celluloid shields (cap type), a bunion-pad type with a celluloid cover, and a dressing consisting of several layers of gauze covered with a perforated adhesive strip were employed. The dressings were held in place by a 3-inch band of adhesive plaster encircling the body. A hole was cut in the adhesive plaster to accommodate the dressing so as to permit its usual ventilation. In the case of the shields, a covering of light wire gauze was necessary to prevent the animals tearing the celluloid away. Among fifteen animals on which the dressings were allowed to remain, eleven, or 73.3 per cent, developed tetanus in from seven to thirteen days, while among eight animals similarly treated but without dressings after eighteen hours there was one case, or 12.5 per cent. The symptoms in this case came on relatively late, appearing on the eighteenth day. All the cases were fatal.

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4. Anderson, J. F.: Postvaccination Tetanus: Studies on Its Relation to Vaccine Virus, Pub. Health Rep. **30**: 2111-2117, 1915.

There was a marked difference in the character of the "takes" in the animals with and without dressings. In the former the lesions were deep, moist, necrotic and foul smelling, while in those without dressings after eighteen hours, the lesions were moist for only a few days at most, then becoming crusted and proceeding to heal. The one control animal which developed tetanus was a wild creature; when approached he would spring to the farthest corner of his cage and in this way repeatedly traumatized the vaccination. At the time of his death the lesion had healed considerably, but was covered by a scab one-half by three-fourths inch, beneath which was a small amount of pus. There was no foul odor.

Experiments with Rabbits.—Twenty rabbits were vaccinated with the same virus-tetanus mixture in a single insertion 1 inch in diameter. Half of the animals were without dressings after eighteen hours, while in the remaining half the dressings were left in place throughout the experiment. Among the ten animals with dressings, there were eight which developed fatal tetanus in from nine to fifteen days, while among the controls there were no cases. Two of the control animals died of symptoms resembling snuffles; tetanus toxin could not be demonstrated at the vaccination sites on these animals.

The rabbits all developed severe "takes." At the time of death of the animals with dressings the lesions were moist, but the accumulation of exudate and the necrosis was much less than that noted in the monkeys. In only one instance was a foul odor noted. In the rabbits without dressings, the lesions soon developed firm dry scabs and proceeded to heal.

Diagnosis of Tetanus in Animals.—The symptoms of tetanus in animals are a counterpart of those seen in tetanus in man, which, as is well known, are rather characteristic. The diagnosis was, however, confirmed in every case except one monkey by excising and macerating the "take" in 100 cc. of saline solution and then injecting white mice with from 0.4 to 0.5 cc. of this extract. The criterion of the presence of tetanus toxin was death in the mice, while controls with the same dose plus tetanus antitoxin remained well.

PROPHYLAXIS

It is realized that the results secured in animal experimentation do not of themselves constitute conclusive evidence when applied to man. However, the significance of these results is hardly to be doubted when their accord with the epidemiologic evidence concerning ninety-eight cases in man is considered. In fact, the evidence seems strong enough to suggest that the practical elimination of postvaccination tetanus may be accomplished by a general attention to certain fundamentals of vaccination, the most important of which is probably the avoidance of the use of shields, or of other dressings save in exceptional instances.

Vaccination Procedure.—The essentials of a proper technic will be briefly considered in the order of their probable importance.[5]

1. Dressings: One should not apply any local covering, and should warn the patient against doing so. The lesion should be kept cool and dry. When this procedure follows a small properly made insertion, the lesion will usually retain its own natural covering—the epithelium itself—and develop a dry scab without having become an open lesion at any time. Should an open lesion develop, a dressing may be desirable for a few days. A large square consisting of a few layers of gauze pinned to the inside of a loose fitting sleeve is probably best. If applied to the arm, the dressing should be large and the adhesive straps loosely applied and as far from the vaccination site as possible.

2. Insertion: Second only in importance to the dressing is the character of the insertion, which should be small, never more than one-eighth inch in its greatest diameter, and preferably made by some method that does not remove the epidermis. The multiple pressure method advocated by Dr. J. P. Leake[6] is admirable. This method consists in making from twenty to thirty very superficial pricks of the skin through a drop of virus in an area not more than one-eighth inch in diameter. A sharp new needle is used. The virus is wiped off immediately.

3. Method of Cleaning the Skin: Many solutions are satisfactory. The important thing is gentleness. Too vigorous rubbing abrades the epidermis and may enable the virus to multiply outside the intended insertion.

4. Site: The insertion of the deltoid is probably the best location for a vaccination. Leg vaccinations in persons up and about are contraindicated.

5. Age: Primary vaccinations are best performed during the first year of life, since at this age the lesion is less subject to injury and accidental contamination and usually runs a milder course than do primary vaccinations performed at a later age.

SUMMARY

1. Epidemiologic evidence indicates that large insertions and the use of shields and dressings predispose to postvaccination tetanus in man.

2. Shields and dressings markedly favor the development of postvaccination tetanus in monkeys and rabbits vaccinated with a virus artificially contaminated with *B. tetani*.

3. A proper vaccination is defined as one in which the insertion is not more than one-eighth inch in its greatest diameter and which is made by some method that does not remove or destroy the epidermis. Such insertions, when treated openly, have never, as far as we are aware, been followed by postvaccination tetanus.

Twenty-Fifth and E streets NW.

5. Those desiring a detailed consideration of the many phases of vaccination should consult Dr. J. P. Leake's questions and answers on smallpox vaccination.

6. Leake, J. P.: Questions and Answers on Smallpox Vaccination, Pub. Health Rep. **42**: 221-238 (Jan.) 1927.

Mental "Mechanisms."—Freud, in elaborating his psychoanalytical theory, has introduced a number of technical terms to describe mental processes which take place unconsciously. These are now so familiar that they require no explanation. By repression painful conflicts become unconscious, and the repressed material causes, by conversion, hysterical symptoms; by dissociation, fugues; by projection, phantasies and delusions; by regression, a return to infantilism, and so forth. On the other hand, by sublimation, the repressed energy finds an outlet in more healthy ways, as hard work or altruistic effort. These terms are part of a large vocabulary of words in everyday use in Freudian psychology. I have always felt an objection to the use of words having a spatial meaning in reference to mental processes, though they may be unavoidable. Breuer says: "All too easily one gets into the habit of assuming that behind a substantive there is a substance." That we are using metaphors in speaking of mental processes is forgotten and the metaphor itself is manipulated as a material thing.—Pierce, Bedford: Subconscious Factor in Medicine, *Lancet*, Dec. 10, 1927.

THE INGESTION OF RED BLOOD CORPUSCLES BY TRICHOMONAD FLAGELLATES

OBSERVATIONS SHOWING THAT IT IS NOT EVIDENCE OF PATHOGENICITY *

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The literature on intestinal protozoa contains a number of references to the ingestion of red blood cells by both amebas and flagellates. By many the ingestion of red blood cells is considered evidence of pathogenicity; by others the red cells are looked on merely as adventitious food particles. The experiments described in this paper were undertaken in an effort to determine which of these positions is the correct one.

For many years one of the principal criteria for distinguishing between *Endameba histolytica* and *Endameba coli* has been the presence of red blood cells in the former and their absence in the latter. There is evidence, however, that under certain conditions *Endameba coli* may ingest red blood cells.[1] The endameba of the mouth, *E. gingivalis,* which was once accused of being responsible for pyorrhea alveolaris, apparently lives principally on leukocytes and bacteria, although Smith and Barrett [2] record the ingestion of red cells and Howitt [3] finds that the washed red cells of the guinea-pig are eaten by specimens in artificial culture.

Various investigators have reported the ingestion of red blood cells by trichomonad flagellates. The trichomonad flagellates that live in the human intestine may possess three, four or five flagella. The five-flagellate organisms, known as pentatrichomonads, were first recorded in patients suffering from diarrhea or dysentery and were found to have the habit of ingesting red blood cells. Derrieu and Raynaud [4] first reported this type in cases of dysentery in Algiers; Chatterjee [5] found it in thirty cases of chronic dysentery in Bengal; Wenyon and O'Connor [6] cite one case in the Near East; Haughwout and de Leon [7] found it in a case of acute dysentery in Manila, and Kofoid and Swezy [8] observed it in three patients with histories of chronic diarrhea. These records appear to indicate that the diarrheic or dysenteric condition was due to the presence of the flagellate, and the ingestion of red blood cells seemed to complete the evidence of its pathogenicity. However, pentatrichomonads have been found in a person who never exhibited diarrhea or dysentery,[9] and it seems probable that the red cells contained in these organisms were ingested because they chanced to be present in the intestinal contents.

Most of the trichomonads of the human intestine have four flagella. That this type also may ingest red blood cells is proved by the observations of Kessel,[10] who found red cells in four-flagellated trichomonads from the stool of a patient suffering from bacillary dysentery; by Reichenow,[11] who reports that this type will ingest red blood cells in artificial cultures, and by Wenyon,[12] who states that he observed red blood cells in specimens passed by a patient suffering from bacillary dysentery and in cultures containing rabbit blood. Kessel [10] also reports the presence of red cells in four-flagellated trichomonads from the urine of a patient passed at the time of menstruation.

MATERIAL

In my experiments, eight species of trichomonads have been employed. These are *Trichomonas hominis* from the intestine of man, *Trichomonas buccalis* from the mouth of man, *Trichomonas* sp. from the intestine of the monkey, *Trichomonas macacovaginae* from the vagina of the monkey, *Trichomonas felis* from the cat, *Trichomonas muris* from the rat, *Trichomonas gallinarum* from the cecum of the chicken and *Trichomonas augusta* from the rectum of the frog. These were all grown in test tubes in serum-saline-citrate medium made up as follows: Loeffler's dehydrated blood serum, 0.5 Gm., was added to a solution of 0.7 Gm. of sodium chloride and 1 Gm. of sodium citrate in 100 cc. of distilled water. All of the trichomonads were incubated at 36 C. except those from the frog, which were kept at room temperature. Fresh blood was obtained from man, the dog, the cat, the rabbit, the rat, the guinea-pig and the mouse.

The experimental material was set up as follows: Twenty-one tubes of culture medium were inoculated with each of the eight species of trichomonads. Immediately afterward fresh blood from the seven mammals listed in the preceding paragraph was added, three drops from each mammal being added to each of three tubes. The material was then incubated for twenty-four hours except in the case of the trichomonads from the frog, which were examined at the end of five hours because of the rapid breaking down of the red cells. In every case a sample from the bottom of each tube was confined under a coverglass and the presence or absence of red cells and the number if present in each trichomonad was recorded for the first hundred specimens encountered on the slides.

The data obtained are presented in the accompanying tables. All the species of trichomonads ingested red blood cells from all the species of mammals used. For example, table 1 shows that 50 per cent of the first 100 trichomonads from the intestine of man had not ingested human red blood cells, 28 per cent had ingested one, 18 per cent had ingested two and 4 per cent had ingested three. As many as seven red cells were found within a single trichomonad; this was true of a trichomonad from the intestine of man that ingested seven red cells from the cat. The largest number of trichomonads that ingested red cells occurred in the case of specimens from the mouth of man, 96 per cent of which ingested one or more red cells from the rat.

* This work was aided by a grant from the Committee on Scientific Research of the American Medical Association.

* Owing to lack of space, this article is abbreviated in THE JOURNAL by the omission of nine tables. The complete article appears in the author's reprints.

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10. Kessel, J. F.: The Ingestion of Erythrocytes by Trichomonas Hominis and Its Occurrence in the Pus of an Amebic Liver Abscess, J. Parasitol. **11**: 151-152 (March) 1925.
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12. Wenyon, C. M.: Protozoology, New York, William Wood & Company, 1926.

The variations in the percentages of red cells from the different species of mammals ingested by different species of trichomonads suggest the question whether there is any real relation between the type of red cells and their ingestibility. If the animals from which blood was obtained are arranged in order according to the percentage of trichomonads that ingested these red cells, the results obtained are as indicated in table 9. This table, for example, shows that more trichomonads from the intestine of man ingested red cells from the cat than from any other of the seven species of mammals; that red cells from the rabbit were second in number as regards ingestibility, and that those from the mouse

TABLE 10.—*Percentage of Trichomonads that Ingested Red Cells According to the Number Ingested by Each Regardless of the Source of the Red Cells*

Source of Trichomonads	Number of Red Cells Ingested							
	0	1	2	3	4	5	6	7
Intestine of man	58	23.4	12	4.8	1	0.4	0.14	0.14
Mouth of man	47.1	33.7	9.8	7.1	1.7	0.4	....	....
Intestine of monkey	89.9	7.6	1.5	0.57	0.28	0.14	....	....
Vagina of monkey	73	17.7	6.15	2.4	0.4	0.28	....	....
Intestine of cat	54.5	28.6	10.04	5	1.14	0.4	0.14	....
Cecum of rat	81.5	14.8	3.1	0.57	....	....	....	....
Cecum of chicken	90.3	8.4	0.84	0.28	0.14	....	....	....
Rectum of frog	92.5	4.15	1.86	0.71	0.4	0.14	....	....

occupy third place. When the data arranged in this way are added together, the totals indicate that more trichomonads ingested red cells from the rabbit than red cells from any of the other mammals. Next in order come the mouse, the rat, the cat, man, the dog and the guinea-pig. Measurements of the red cells from these mammals were made and are presented at the bottom of table 9. It is evident that more of the smaller red cells, that is, those from the rabbit, the mouse, the rat and the cat, were ingested than the larger red cells, that is, those from man, the dog and the guinea-pig. This suggests that size may be a factor that determines the extent to which the red cells of a particular animal are ingested by trichomonads.

The percentages of trichomonads from the various sources that ingested red cells, regardless of the source of these red cells, are given in table 10, according to the number ingested by each. These percentages bring out clearly the differences in the number of red cells ingested by the eight species of trichomonads. They indicate that the trichomonads of the frog at room temperature are the least voracious and that those from the intestine of the monkey and the cecum of the chicken come next, whereas those from the intestine of the cat and the mouth of man not only ingested red cells most frequently but repeated the process until a considerable percentage of the organisms contained two or more specimens each.

It is well known among protozoologists that protozoa exercise a certain amount of selection with respect to the ingestion of food particles. This suggests that another factor that may account for the great variation in the numbers of red cells ingested may be the character of the red cells or of the plasma which was added to the culture medium with them. It was noted that the trichomonads multiplied more rapidly in the cultures to which blood was added than in other cultures made up at the same time but lacking the blood. The numbers of trichomonads that appear in cultures varies greatly under so-called normal conditions; hence it is possible and even probable that the variations as presented in the tables might disappear if a large enough series of observations were made.

SUMMARY

The object of the experiments described in this paper was to determine to what extent various species of trichomonads will ingest red blood cells from various species of mammals and the bearing of these data on the pathogenicity of the flagallates. Eight species of trichomonads from as many species of animals were obtained in serum-saline-citrate culture medium. Blood from seven different species of mammals was added. The number of red cells ingested by each species of trichomonad was determined. It was found that every species of trichomonad used ingested red cells from each of the seven species of mammals. Considerable variation was noted with respect to the percentage of trichomonads of the different species that ingested red cells of the different types of mammals and the number of red cells ingested by each flagellate, this number ranging from one to seven. These data indicate that the larger the size of the red blood cell, the more difficult it is for the trichomonad to ingest it. This may account for some of the variations observed. It is suggested that the character of the red cells or of the plasma introduced into the cultures may also influence the percentage of red cells ingested.

The conclusion is reached that red cells are accepted by the species of trichomonads used just as are other food particles in their environment, such as bacteria and organic débris, and that the habit of ingesting red cells cannot be used as evidence of pathogenicity.

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HEMATURIA DUE TO SHOE DYE POISONING

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Since the papers of Muehlberger [1] and Patek [2] have appeared, attention has been called to the possibility of shoe dye poisoning being the cause of otherwise unexplained cyanosis appearing in previously healthy, normal persons. Two such cases have appeared in Syracuse within the last six months, and in the last case, to be described presently, an unusual feature, heretofore undescribed, was present; namely, gross bleeding from the urinary tract.

The toxic effect of aniline dye poisoning is usually cardiac. The conductive mechanism of the heart is disturbed and the blood pressure becomes low. The constant feature of cyanosis is explained both by the resultant impaired circulation and by the presence of para-aminophenol in the alkaline medium of the blood and tissues.

In the acute stages of aniline dye poisoning, there is a relative increase in erythrocytes, in hemoglobin and in oxygen capacity. Contrary to the opinion of many,[3] methemoglobin bands have not been seen when the blood of these patients has been examined microscopically.

Malden,[4] in studying the toxic effect of this type of poisoning on the blood, demonstrated basophilic gran-

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4. Malden, W.: Some Observations on Condition of Blood in Men Engaged in Aniline Dyeing, J. Hyg. **7**: 672, 1907.

ulations in the red corpuscles. Much importance should be attached to this phenomenon, as it is the earliest noticeable sign in the blood, just as it is in lead poisoning.

In the cases described, the urine is brown, turbid and smoky. According to Young and Meek,[3] it contains para-aminophenol and not methemoglobin. Red blood cells are rarely seen.

The postmortem does not show anything abnormal except chocolate colored blood.

REPORT OF CASE

B. S., a youth, aged 19, employed as a clerk, strong and athletically inclined, with a negative past history, came under my care because of a marked cyanosis. He had put on a pair of shoes which had been dyed black that morning. An hour later he complained of some nausea, felt light-headed and became very irritable. He was told that his lips and ears were blue. This blueness seemed to increase during the afternoon. When he presented himself for examination, he complained of dizziness. He stated that his head seemed to be held in a vise, and, because of the increasing blueness of the lips, ears and finger tips, he was very much alarmed.

Examination revealed evident cyanosis. The entire skin was dusky and the eyeballs were injected. The mucous membranes of the mouth and throat were congested. The respiratory rate was increased to 20 a minute; otherwise the lungs were normal. The heart sounds were somewhat feeble. There was no arrhythmia, and the blood pressure was 95 systolic and 55 diastolic. The pulse rate was 90. The temperature was normal.

The hemoglobin was 100 +. The red blood corpuscles numbered 6,200,000; the white corpuscles, 7,500, with a normal differential count. The nonprotein nitrogen was 40 mg. per hundred cubic centimeters. The Wassermann reaction was negative. Venipuncture produced blood which was unusually dark. The urine was essentially normal with the exception of its dark brown color. Microscopic examination did not reveal any formed elements.

The patient was put to bed; his feet were washed with a dilute alcoholic solution, and elimination treatment was started. The following day he complained of great frequency with dysuria, and the urine became very bloody. Discomfort associated with urination increased and blood clots appeared in the urine. Microscopic examination did not show any renal casts or epitheliums, but the specimens were loaded with red blood cells. This hematuria kept up for four days and then gradually diminished in intensity. At the end of the second week there were still many red blood cells in the urine, but blood was not detected macroscopically. At the end of the third week only isolated red blood cells were to be seen. At no time was the output diminished. The blood pressure remained low and there was no edema. The nonprotein nitrogen remained at the level first found, 40 mg. per hundred cubic centimeters.

The cyanosis disappeared after the first day, and, subjectively, with the exception of urinary discomfort, the patient felt much better after the first twenty-four hours.

COMMENT

Mention is not made, anywhere in the literature, of the possible effect of para-aminophenol on the renal structure of the body. In the case cited, this was a predominating feature and at first caused some alarm. Whether the kidney, ureter or bladder was particularly sensitive to the dye is a question. Cystoscopic examination was not done to determine the source of the bleeding. In the sixty-one cases reported to date, urinary injury evidently was not present, recovery ensuing in almost all the cases in the course of a few days after the dye derivative had been entirely eliminated.

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VENEREAL DISEASE CONTROL

PROBLEMS AND METHODS *

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THE STATUS OF THE VENEREAL DISEASE CONTROL MOVEMENT

In the United States, the movement for the control of syphilis and gonorrhea lies today somewhat up-grade from the bottom of a declivity, down which it gently subsided from the epochal peak of effectiveness reached during the World War. In this somewhat fungoid rise and cataclysmic fall, it has been true to the emotionalism of American reformatory and constructive tradition. In marked contrast, the slower progress of our more phlegmatic overseas brethren, the British, whose national program scarcely assumed distinct form during the war, has in the end brought them apparently, or at least measurably, farther than our own. Today the English vital statistics are measuring, in what appear to be fairly trustworthy terms, a decline of nearly 50 per cent in the incidence of syphilis and gonorrhea in the British Isles. Belgium, Germany and France are reporting comparative and in some respects confirmatory data. The United States is silent, save for the ready voice of assertion based on impression rather than facts. The ebb tide of a fiscal program built for war emergency has left the skeleton of a great public health campaign high and dry on the shoals of an unenlightened retrenchment policy.

Granted that there may have been some waste, duplication and lack of plan, as in all our war-time expenditure, does that justify the burial of the conception of control of two great disease scourges in the remnants of the war-created machinary through which the movement for the moment found expression? Is the movement for the control of syphilis and gonorrhea merely a matter of war emergency, and does peace justify its return to the obscurity that enveloped it before 1914? No sanitarian could concede such a point of view for a minute. A disease such as gonorrhea, almost as common as measles, which affects from 50 to 60 per cent of males at some time in their life history, and whose complications are responsible for a considerable part of the specialties of gynecology and urology, is not a mere war emergency. A disease such as syphilis, which ranks among the foremost if not actually the first of all the causes of death which affect mankind, a disease which has five million presumptive victims in the United States alone, which produces 13 per cent of the insanity in our asylums and an unrecorded toll of prenatal mortality, deafness, visual handicap and blindness, cannot be returned to the obscurity of peace. It is a duty of the most unmistakable sort for an association such as this one, concerned with the protection and furtherance of the public health, to support and uplift by every possible means the hands of those who are trying to bring into the struggle with venereal disease an orderly and sustained effectiveness, a permanent field and headquarters organization and facilities from which alone can come results such as are now being published to the world from the other side of the Atlantic.

What are these results? Is there really anything in all this effort to control what the cynical among us

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* Read before the special session on venereal disease control at the fifty-fifth annual meeting of the American Public Health Association, Cincinnati, Oct. 20, 1927.

believe we shall always have with us? Sir Arthur Newsholme, on the basis of the British mortality figures from 1901 to 1925 and the British venereal disease clinic registration from 1918 to 1925, finds that the crude annual death rate from syphilis at all ages, based on the registrar general's review for 1924, has fallen from 53 in 1901 to 33 in 1924. Mortality from general paralysis of the insane has fallen from 70 in 1901 to 40 in 1924; that from tabes dorsalis has slightly increased from 13 in 1901 to 19 in 1924; aneurysm has decreased from 30 to 26; the combined rate from 166 to 118, and relative figures from 100 to 71, in this lapse of time. The most striking change is apparent beginning with 1919, when all the rates exhibited the most pronounced drop apparent in years, a decline that has been held consistently or become more pronounced between 1919 and 1924.

Sir Arthur Newsholme points out that a revision of these figures, such as Osler suggested, to include the occult death factor from syphilis, would place the disease, with cancer, tuberculosis and pneumonia, as one of the four chief causes of death. The drop in mortality figures has taken place in the face of improved diagnosis and more complete registration. The decline in death rate of 1924 as compared with 1921 amounts to 29 per cent, and when 1917 is compared with 1924 it amounts to 32 per cent. Sir Arthur indicates that the changes in mortality from late complications are an index of the effectiveness of treatment begun a decade ago, while the more recent changes in registered mortality from syphilis as such indicate the effectiveness of the World War campaign.

An equally interesting evidence of the effectiveness of the British antivenereal campaign is found in the decline of new cases of gonorrhea and new cases of syphilis in the face of an increased number of clinics and a steadily increased total attendance from 1918 to 1925. In 1917 the total number of government clinics was 113, increased to 193 in 1925. The total attendance increased from 204,692 to 1,719,148. New cases of syphilis in 1918 were 26,912; in 1919, 42,134; in 1925, 22,588. Gonorrhea, on the other hand, has shown a smaller decline, probably because of the lesser effectiveness of medical treatment control in this disease. An interesting incidental observation concerns the comparison of the experience of Portsmouth and Birmingham. In both these cities there has been a fairly parallel and equal diminution of cases of syphilis and gonorrhea, yet in one of them disinfection as a prophylactic has been publicly advocated and in the other it has not. The author compares his observations with those of Bayet[1] of Brussels, in which essentially the same experience is recorded for Belgium. The chief feature of the work accomplished in both countries has been prophylaxis by treatment. Bayet concludes that arsenical medication has reduced the contagious period in syphilis from three fourths to four fifths, although Newsholme questions the accuracy of this estimate. As they stand, the figures constitute the greatest encouragement to workers for venereal disease control that has thus far appeared.

PREVENTIVE PROBLEMS IN THE FIELD OF VENEREAL DISEASE CONTROL

Syphilology has a well defined preventive phase, thus far all too little stressed in teaching and propaganda. The control of gonorrhea has a similar side, less developed, however, because of the lack of a specific form of treatment which rapidly reduces infectiousness, such as is available in dealing with syphilis. For increased emphasis on the preventive aspects of syphilis, the medical school must be responsible. It must shift its teaching point of view from outspoken consequences to prodromes and obscure beginnings. Instead of permitting the neurologist to leave the impression that tabes and general paralysis are the most significant aspects of neurosyphilis, the syphilologist must emphasize the fact that symptomless neurosyphilis detected only by examination of the spinal fluid years before the onset of either consequence is really the sort with which the practitioner should busy himself. Instead of encouraging the professor of medicine to give the impression that the candy-bucket liver, the bulging aneurysm and the laboring decompensated heart are the most significant aspects of cardiovascular syphilis, stress must be laid on the very earliest and hence treatable signs of involvement of the aorta, the tambour second sound and the symptoms of precordial stress. Every time the medical student is permitted to underrate a chancre or to treat a secondary efflorescence as merely skin deep by symptomatic methods, another patient enters the medical wards and the asylums of the future, another express train crashes in the darkness, another corporation totters, as syphilis pulls loose its central peg. Until medicine is taught preventively to the physician of the future, the individual side of the venereal disease problem continues to move under a cloud.

Sooner or later, the venereal disease control movement must face squarely the issue of medical prophylaxis of the venereal diseases. It will not do to continue indefinitely the practice of regarding a method that displays the effectiveness of mechanical and chemical prophylaxis as merely a war-time expedient. To wait until a person develops disease, when even one in a hundred might be saved by some easily applied medical measure, is an anachronism in public health procedure for which morals cannot long stand sponsor. Just how the problem will be solved, I cannot tell you. It is in process of an uncontrolled and unstudied solution by way of the corner drugstore and the manufacturers of birth-control devices and prophylactic packets. Its controlled study and intelligent use is to my mind largely a matter of education, support and administrative detail. The very clinic that treats venereal disease might become a center for the application of at least a partially effective prophylaxis.

Educational methods in the control of venereal disease have perhaps had their ablest exponents and their most thoroughgoing employment in this country. It may be properly regarded as a glorious tradition that the United States entered the war on the side of the best rounded program for the prevention of syphilis and gonorrhea ever devised. It took into account and utilized every educative, moral and constructive influence that could be brought to bear on the problem of keeping young men and women within sexual bounds. It is then indeed a tragedy of unfulfilment that today we have not a single figure that I know of to place beside the figures of continental countries in which this educational phase received so much less emphasis, to prove that our way bears the better fruit. The European emphasis has been on treatment as the great preventive, and their figures seem to be proving that it works and works well. We who have laid stress on education are, then, directly challenged to prove that the brochure, the leaflet, the lecture, the lantern slide and movie film, the parent-teacher league, the play-

1. Bayet: La lutte contre le syphilis en Belgique, 1926.

ground and social worker, on which hundreds of thousands of dollars have been spent, can compare in efficacy with an equal sum spent on arsphenamine and syringes and the personnel to use them. I may give it as my personal credo that they are worth the cost, if not to the obliteration of syphilis and gonorrhea, then to the elevation of mankind above the muck in which those diseases thrive. But it remains a credo and not an established fact. The preventive worth of educational propaganda should be removed as rapidly as possible from the conjectural and impressionistic field in which it now lies and placed if possible on the sounder factual basis already developing about the preventive value of treatment.

PROBLEMS OF TREATMENT

In discussing problems of treatment, one may consider first the woful difference that exists today between the field of gonorrhea and that of syphilis. Pray that there may be more gonorrheologists and better ones—and do not pray alone, but go out on the highways and get them. Search for and subsidize the laboratory worker who will attack the gonococcus. Encourage with pay and academic emolument the clinician who will devote himself to the treatment and teaching of this disease. Until there is a method of controlling infectiousness comparable to that available in the treatment of syphilis with arsphenamine, the movement against gonorrhea limps on half a foot. The effect is apparent enough in the charts of Sir Arthur Newsholme which show where the drop in venereal disease incidence is taking place—in syphilis, the more treatable and controllable, because the more thoroughly investigated disease, and not in the incidence of gonorrhea.

In the syphilologic field, in which, of course, I see the trends more clearly, the tremendous worth of an effective infection-controlling drug has recently been suggested by the studies of Jadassohn and Jeanselme. According to Anwyl-Davies, they attribute the decline in syphilis in the countries surrounding France, as contrasted with a recrudescence within France itself, to the French substitution of bismuth, an inferior spirillicide, for arsphenamine. Drugs and their evaluation are indeed assuming a striking importance in preventive syphilology, if the difference between the spirillicidal action of arsphenamine and bismuth can make most of the difference between a 50 per cent drop in the incidence of syphilis in Germany, England and Belgium and a 20 per cent rise in the city of Paris. Such a picture is probably overdrawn; but the place that drugs take in the control of syphilis is none the less supremely important. The problems that involve syphilotherapeutic agents at the present time include especially the following: Is the spirochete of syphilis becoming resistant to the agents now in common use against it? There is evidence that the blood Wassermann reaction is more difficult to reverse than it was ten years ago, even with identical technics of treatment and test. Relapse seems at times to be assuming a peculiar obstinacy and refractoriness—but this is probably a case of greater alertness and better recognition. Longer courses seem at times to accomplish less than short courses did ten years ago, but here again we deal with impression. In any event the whole question needs the most searching study, for there is a good deal of experimental evidence leading us to expect just such a move on the part of *Spirochaeta pallida* to meet our new efforts at its extermination. Relapse should be critically studied, and its infectious forms particularly made familiar to every crossroads doctor, that the spread of the disease by the relapsing carrier may be evaluated and reduced to the lowest terms.

Simplification of treatment should be kept constantly in mind, so far as it is consistent with effectiveness—for simple but less efficient methods must not be substituted for slightly more difficult, effective ones. It is for this reason that my first instinct is to oblige the malarial therapeutists doubly to prove their ground. Their method is costly, restricted in accessibility, complex and limited to the specialist. It therefore goes against the desired trend in preventive syphilology. He who devises, as in the use of tryparsamide, a less complicated, less painful, less dangerous, more widely usable method of nearly equal effectiveness is the better public servant.

The control of the therapeutic testing and efficiency of drugs used in syphilotherapy is an extremely important issue at the present day. Not everything that comes in an ampule, labeled and bearing the name of even a reputable manufacturer, is an effective drug. "Dud" lots of even the most potent and standard drugs have been shown to exist and to be indistinguishable from the effective lots except by their failure to kill spirochetes. The revelations of Dale and White, working with a neoarsphenamine in Great Britain, and of Voegtlin and others in this country, should lead forthwith to official testing by the Hygienic Laboratory for therapeutic effect of every batch of arsphenamine offered for the market. And while I advocate such therapeutic testing, let me say that the tendency to make the behavior of the laboratory animal the standard, rather than the action of the drug in man, can be overdone. The two groups of results, while usually, are not invariably parallel, and the court of last resort, especially in testing new drugs, should be the clinic, not the animal house.

Side by side with the reduction of complexity in modern treatment methods should come a much needed reduction in toxicity of medicinal agents. We have, I sometimes fear, the heavy metal complex in our thinking about syphilotherapy. "Bayer 205," devised by the Germans for the treatment of trypanosomiasis, should show us, if its composition is correctly reported, that it is possible to devise parasitotropic drugs of an extremely low toxicity, of which arsenic, bismuth and mercury form no part—for of the ultimate toxic effects of these drugs, administered as they now are over a period of years, we know little or nothing at the present day, and of their complications we see entirely too much.

Eminently practical problems arise about the training of the practitioner of the future for the work of extinguishing syphilis and gonorrhea. Here again the medical school must meet a heavy responsibility, to which it is hardly as yet alert. Technical proficiency in the manipulation of the syringe and needle is vital to an effective syphilology, and this technical proficiency the present-day practitioner does not possess. With the best intent in the world, his efforts at intravenous and intramuscular injection are battery, his lumbar punctures aggravated forms of assault. Yet without them there is no modern curative syphilotherapy. Syphilologists who attempt to act as consultants find themselves hopelessly handicapped in getting instructions carried out—officers without troops, shoulder-straps but no riflemen. Into this gap the medical school must move as rapidly as possible, turning out the common soldiers of syphilology, who by actual experience in a clinic have learned to give an intramuscular injection without having to send the patient home in an

ambulance, and to differentiate the median vein from the median nerve before injecting arsphenamine. As the complexity of decision in syphilotherapy increases, it is my hope to see a genuine corps of syphilologic consultants develop, such as now exists for tuberculosis, and to see, moreover, centers for both free and pay patients where all the complex and difficultly interpretable examinations necessary to the full study of the individual case may be carried out and their results coordinated by a staff that knows syphilis. This is essentially an amplification of the German advisory center, of which I have often spoken.

The final and the crucial issue of modern clinical syphilology is that of the curability of the disease. While the results of five and ten year checks on treated patients which are now coming in, and the results of animal experiment, give us ground for high hopes, only time, repeated examination, and autopsy on man can give us a final answer. Assertion, optimism and impression, here, as in our statements about the decline in incidence of the disease and the antivenereal value of educational propaganda, play too large a part. Few clinical organizations and few investigators are prepared or are preparing to deal with this problem on an adequate scale. It implies in the first place a *rapport* between the syphilis clinic and a spirochete searcher or sleuth hound in the pathologic laboratory which rarely exists. The work of Warthin is a precious though only partial demonstration of its possibilities. Such contacts should be sought out and developed. Every autopsy on a patient who has had the modern effective treatment for syphilis is worth its weight in gold, and a central laboratory might well be encouraged and subsidized to examine such material with the last degree of thoroughness, whatever its source. In the end the answering of this question, which will finally settle all doubts as to the worth and validity of the medical side of the venereal disease campaign so far as syphilis is concerned, is a matter of follow-up, of which I shall speak in the next paragraph.

RESEARCH ORGANIZATION AND PROBLEMS

Omitting any mention of the directional trends of research in the venereal disease field, I will stress several aspects of the situation that seem to me critical. First is the problem of finance. Research in the venereal diseases, especially syphilis, involving the maintenance of animal hospitals of large size, to say nothing of laboratories, is an expensive affair. Six or seven years ago I estimated the budget of a not particularly pretentious laboratory for this purpose as not less than $30,000 a year, and I believe I undershot the mark at the time. The tremendous costliness of research in this country of high wages and living standards is of course one of the most striking contrasts of our situation as compared with that of the European clinics, in which professional overcrowding and a lower living standard make it possible to secure able men at a pittance. It accounts to no small extent for the European origin of our most important syphilologic discoveries. As one of my good friends remarked to me, American clinicians are devoured by their patients, for the available personnel, even in a full-time clinical organization, never quite overtakes the routine, to say nothing of doing anything creative. The sequestration of a group for pure research thus becomes a problem in money getting on a large scale. Private wealth cannot easily be interested in a stigmatized enterprise like that of venereal disease control, bearing a label that is social anathema. Three sources of funds remain open: the great foundations, the public funds and the private contributions of the concerns who make money from the technical perfection and sale of the products of scientific advance in this field. The last mentioned should bear much more load than it has received, and it is to be hoped that the future will see such a *rapport* developing in our field as exists between many of the great industrial concerns and the university groups and research laboratories of this country and Europe.

The avoiding of exploitation and personal aggrandizement might be accomplished through a national association, as in the case of the American Tuberculosis Association, as Moore has suggested, or through the National Research Council.

American research in the venereal disease field, especially on the clinical side, has been notably deficient in long range planning, and the literature is loaded down with reports in which the simplest criteria of control are violated right and left. Clinical research in syphilis takes years, not weeks or months, in consummation, and few clinics have had the foresight or the means to develop records or to stick to a single direction long enough to secure a significant result.

Our greatest weakness, however, is identical with that of all clinical work in medicine at the present time —inadequate follow-up of the sick person. As in the demonstration of the results of propaganda, in which our shortcomings are manifest, so in the demonstration of the effect of treatment and the relative merit of different methods. We are unable to trace results. From 20 to 40 per cent is the best proportion of patients kept under observation, of the vast numbers that annually pass through our clinics. The perfection of follow-up becomes therefore one of the critical problems of the syphilis clinic; and social service, through whose aid it is usually done, plus the strong arm of the local public health officials, become two of the most important of research implements in this field of modern medicine.

ETHICAL AND SOCIAL COLLATERALS

The movement for venereal disease control involves at every turn collateral factors in the social and ethical fields which are of vital importance. It is to these I would direct attention in closing. No superficial cynicism can conceal the fact that tremendous issues of personality and character are involved in the handling and disposal of syphilis and gonorrhea as medical problems, and that the disease frontier will move backward and forward under influences totally foreign to the purely medical issues involved. It is in the hope that the physician may become an active participator in the solution of these moral problems, which sometimes seem to lie across the path of direct medical solution of a venereal disease issue, that I would urge all venereologists to participate in the social hygiene movement, to inform themselves on birth control and the family, to avoid cynicism and to have an open mind for ideals in the matter of sex ethics. The physician in venereal disease work is of necessity an advocate of birth control under medical direction. The Wisconsin experiment and Hall's study of it have shown that he can be a capable and even enthusiastic cooperator in the development of checks on marriage which tend to reduce the danger of transmission of infection within this most important of human relationships. It remains now to be seen whether the physician can be interested in other more social phases of venereal disease control, the more inspiring because the more constructive of character and the more expressive of idealism. Can

he, for example, be made to tell the sincere and attentive student from the moral side of the tremendous wealth of personal knowledge of the sex habits and thinking of mankind which his work, like that of the priest, brings to his door? Can he be induced to see and study this material with an eye alert for other than purely medical problems? Such a consummation is devoutly to be wished. It will come to pass, and medical control of venereal disease will at last stand in its right relation to the scientific and the humanistic study of sex ethics, when the physician sees more science and less moral cock-sureness in the hygienist's program, and the hygienist finds the physician more of an idealist than he has believed him to be. The venereal disease problem plays great issues against one another. More than one sincere mind has wondered whether, given perfected birth control and no more venereal disease, the bulwarks of the existing moral order will not collapse. Toward that inevitable day when decision in sex ethics shall be emancipated from fear of loathsome disease consequences and be determined solely by high principle and a sense of profound responsibility to the partner and the race, hygienist and venereologist should, and will, move in step.

THE STANDARDIZATION OF PARATHYROID ACTIVITY

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The method used in the extraction of the parathyroid hormone is a vigorous treatment involving boiling in a solution of a strong mineral acid in order to liberate the activity, possibly as a result of some hydrolytic action.[1] The methods that yield the active principles from other endocrine glands do not yield the activity of the parathyroid, whereas the method that has proved successful for the parathyroid is known to decompose most of the other known active endocrine principles.

Two methods are available for the standardization of active parathyroid extracts on dogs. The method proposed by Collip[2] is based on the production of hypercalcemia, an abnormal condition, in normal dogs. The method that I find most satisfactory is based on my early work on dogs in which operation had been performed.[3] Following the operation of parathyroidectomy there is a rapid fall in the blood serum calcium, which amounts to about 30 per cent within twenty-four hours. The injection of an amount of my original hydrochloric X equivalent to 0.3 Gm. of fresh parathyroid tissue, carefully freed from fat and foreign tissue, restores these dogs to normal within six hours. In other words, my method of standardization consists of producing an abnormal condition, comparable to the condition we wish to treat in human beings and in restoring this condition to normal by the administration of an active extract.

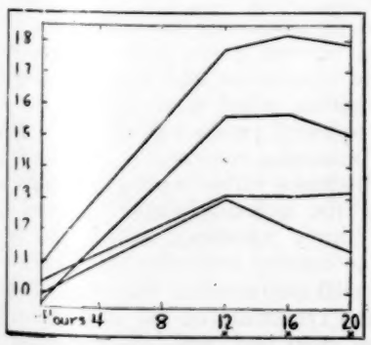

Chart 1.—Variability of response of dogs to administration of an extract.

In addition to its logical scientific basis, my method of standardization possesses a considerable practical advantage. In normal dogs the variability of response is so great that large numbers of animals are necessary to standardize properly any one lot of extract prepared for experimental or clinical use. This variability is illustrated in chart 1.

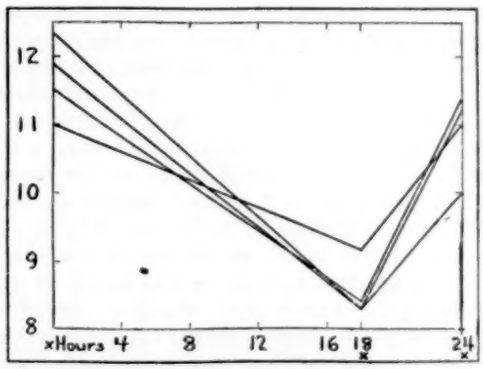

Chart 2.—Uniformity of response of dogs in which a true parathyreopriva has been established and in which the calcium content of the blood serum has decreased.

Dogs that have been operated on in which a true parathyreopriva is established and in which a definite drop in the calcium content of the blood serum occurs, respond to the treatment with considerable uniformity, as is illustrated in chart 2.

TABLE 1.—*Effect of One Hundred and Fifty Units Subcutaneously*

Dog Number	Weight, Kg.	Serum Calcium (Mg. per 100 Cc.) Before Operation	20 Hours Later	26 Hours Later	Increase
18	12.7	11.7	8.5	10.5	2.0
20	10.3	10.7	7.7	8.6	0.9
21	13.6	10.5	7.9	9.5	1.6
22	19.1	10.7	7.9	9.1	1.2
24	18.0	10.5	8.2	9.7	1.5
Average					1.4

The product that I have prepared for clinical use is, therefore, standardized on parathyroidectomized dogs (average weight 15 Kg.). Twenty-four hours after operation these animals show approximately a 30 per cent drop in the blood serum calcium, but must not show severe symptoms of tetany. An amount of extract is then administered that will cause an average rise of 3 mg. in the calcium level within six hours, thus practically restoring the normal level. My clinical unit is defined as one one-hundredth the amount of extract required to produce each 1 mg. rise in calcium under the experimental conditions specified.

My original hydrochloric X, when prepared from fresh, potent and carefully cleaned gland material, is found to be equal to 60 units per cubic centimeter.

In the accompanying tables are shown the uniformity of the results obtained on dogs in which operation was performed. The extract used was a purified product obtained from the hydrochloric X by precipitation as a picrate.

1. Hanson, A. M.: Mil. Surgeon **52**: 434 (April) 1923; **54**: 76 (Jan.) 1924. Collip, J. B.: Am. J. Physiol. **72**: 182, 1925; J. Biol. Chem. **63**: 395 (March) 1925. Hjort, A. M.; Robinson, S. C., and Tendick, F. H.: Ibid. **65**: 117 (Aug.) 1925.
2. Collip, J. B.; Clark, E. P., and Scott, J. W.: Biol. Chem. **63**: 439 (March) 1925.
3. Hanson, A. M.: Minnesota Med. **8**: 283-285 (May) 1925.

The results recorded in tables 1 and 2 and in chart 2 were obtained following the first drop in serum calcium after operation, no treatment having been previously given. The results recorded in table 3 are based on animals that had received various injections previously. The uniformity of results may be contrasted with the variations in results with normal dogs, as recorded in chart 1.

In treating parathyroidectomized dogs for the purpose of standardization, it is important, of course, to exclude dogs that are in a state of serious tetany. In a series of twenty dogs in which operation was performed only one was excluded because of an unusually severe tetany that developed within the twenty-four hour period following the operation—symptoms of a severity that would not develop until thirty-six to forty-eight hours after operation. A second animal (a bulldog) was also rejected because of failure to show any appreciable drop in the blood serum calcium, a fact that verifies previous observations on this breed of dogs.

The object of parathyroid therapy should be to restore the normal calcium content of the blood serum. Large doses of the calcium raising hormone are dangerous [4] and should never be used clinically, except in such cases as marked acidosis and severe tetany, and then its effect should always be carefully checked by calcium estimations. Even in such cases, the large initial dose should be followed by smaller doses of from one-tenth to one-fifth that of the first injection every twelve hours. It is found that such smaller doses, given every twelve hours for five or six days, will bring about a gradual readjustment, approaching normal in most cases.

TABLE 2.—*Effect of Three Hundred Units Subcutaneously*

		Serum Calcium (Mg. per 100 Cc.)					
Dog Number	Weight, Kg.	Before Operation	24 Hours After	28 Hours After	30 Hours After	32 Hours After	Maximum Rise
26	10.9	11.3	7.2	9.4	10.3	9.9	3 1
27	20.5	10.6	8.6	10.2	11.3	11.9	3.3
28	11.4	9.5	8.8	9.8	10.3	11.0	2.2
29	12.3	10.3	8.6	10.3	10.8	11.2	2.6
30	14.1	11.2	8.6	10.1	11.0	11.2	2.6
31	12.7	10.4	7.7	11.6	12.1	12.5	4.8
32	9.5	11.8	8.8	11.6	11.5	11.4	2 8
Average							3.1

TABLE 3.—*Effect of Six Hundred Units Subcutaneously*

		Serum Calcium (Mg. per 100 Cc.)		
Dog Number	Weight, Kg.	Initial	After 16 Hours	Maximum Rise
17	12.3	7.9	13.7	5.8
19	16.4	7.0	11.9	4.9
20	10.5	6.1	11.9	5.8
22	19.1	5.9	10.3	4.4
24	18.0	7.2	12.6	5.4
Average				5.3

The dosage that I have used in my clinical work is from 30 to 60 units every twelve hours for five or six days. Following this, an interval of from seven to fourteen days is allowed to elapse, after which the treatment may be repeated. An exception to this is severe tetany following operations for goiter, when it is necessary to continue the injections over a long period of time, preferably keeping the calcium level slightly below normal rather than above normal. Used in this way, it is a safe product to place in the hands of the profession for general clinical use and does not require checks on the blood serum calcium in most cases.

4. The Pathology of Overdosage with Parathyroid Hormone, editorial, J. A. M. A. **89**: 294 (July 23) 1927.

SUMMARY

1. Relatively small doses of the parathyroid hormone will restore parathyreoprivic dogs to normal.

2. Parathyroid extract, for clinical use, should be standardized against a known hypocalcemia.

3. The use of a smaller, accurately standardized unit avoids the danger of inducing a marked hypercalcemia.

THE NATURE OF THE RESPONSE OF THE MUSCLES TO FARADIC STIMULATION *

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Electricity has found a rather wide use in medicine, and various forms of it have been employed therapeutically in the treatment of many diseases. There is as yet insufficient knowledge of the physiologic response of the body to the several forms of the electric current to make possible an explanation of the benefit that is alleged to occur in many cases from such treatment.

A number of workers have reported that a general stimulation of metabolism, as evidenced by an increased excretion of metabolic end-products, follows several kinds of electrical stimulation. The work of Steel [1] may be mentioned in this connection. He determined the urinary output of water, total solids, nitrogen, urea, creatinine and sulphur for a three day period, during which his subject received certain electrical treatments, and contrasted the results with the composition of the urine of the same subject for like periods before and after. In this work Steel studied different types of electrical treatments, particularly high frequency currents, which in recent years have been held in high favor by electrotherapeutists. The procedures employed were the faradic sinusoidal current, which is an interrupted induced current given at a frequency of 45 per minute in one experiment and 90 per minute in another; autocondensation, which is an induced current of very high frequency producing considerable thermal effects but no muscular contraction; the static or Morton wave, which causes rather widespread muscular contraction, and the galvanosinusoidal current (70 milliamperes for thirty minutes), which has a thermic effect as well as causing muscular contraction.

Steel found an increased excretion of nitrogen, total solids, urea, sulphur and creatinine on the days when the electric current was used and, with the exception of those currents which had a marked thermal effect, an increased water excretion. In general, a marked similarity of response was found to occur in all the electrical procedures employed, indicating a stimulation of metabolism from each of several widely different electrical treatments.

* From the Laboratory of Clinical Chemistry, Presbyterian Hospital.
* The work here reported is part of a study on chronic arthritis in collaboration with R. B. Osgood, M.D., of Boston. The expenses were defrayed by contributions from various sources, including a number of patients.

1. Steel, M.: J. Electrotherap. & Radiol. **34**: 243 (May) 1916; M. Rec. **89**: 459 (March 11) 1916.

Rowe and Hunt [2] also found an increase in nitrogen and sulphur excretion following the use of high frequency currents. They report a slight drop in the blood sugar during this treatment.

We have not seen any reports in which the muscular activity following stimulation with a current of low frequency has been measured in terms of the characteristic chemical changes that accompany muscular contraction. The work here reported was conducted with the view of ascertaining whether slowly interrupted faradic stimulation of muscle, as often used therapeutically to preserve and increase muscle function, would cause sufficient muscular activity and consequent lactic acid production to alter the acid-base balance of the blood. During severe muscular exercise of a few minutes' duration, as Barr, Himwich and Green [3] and Hill, Long and Lupton [4] have shown, there is in the blood a large increase in lactic acid, which returns to normal levels only after from fifty to ninety minutes. This increase in lactic acid is sufficient to cause, temporarily, a pronounced acidosis.

EXPERIMENTAL

The subjects of the five experiments which form the basis of this report were adult men from the outpatient department who had been receiving physical therapeutic treatments, though not necessarily electrical treatments. One was convalescing from a fracture (experiment 1) and one (experiment 5) from a dislocation of the elbow. The subject of experiment 2 had marked muscular weakness, particularly of the shoulders and arms, but no muscular atrophy; the provisional diagnosis was psychoneurosis. The subject of experiment 3, also from the neurologic clinic, had a bilateral bursitis of the shoulder with loss of motor power. Experiment 4 was carried out on a fairly vigorous man, aged 60, with mild diabetes and albuminuria.

In each experiment, samples of the urine and blood were obtained before and again at the conclusion of the electrical treatment. A slowly interrupted faradic current with a rate of about 90 shocks a minute was used. Each shock caused a decided muscular twitch, which was as large as was compatible with therapeutic practice, when one pole was held over the motor point and the other pole at a nearby indifferent point. Sixteen shocks were given at each motor point. The muscles of the legs were first stimulated, then those of the trunk and neck, and lastly the arms, ending with the muscles of the arm from which the blood samples were taken. It took about twenty minutes to cover the body in this way. We are indebted to Mr. J. J. O'Brien of the physical therapy department of the Presbyterian Hospital for giving the electrical treatments.

The blood samples were collected under oil in tubes containing potassium oxalate and sodium fluoride. Each sample was analyzed for its oxygen and carbon dioxide content and oxygen capacity, the methods of Van Slyke and Stadie [5] being used. The plasma p_H was determined by Hawkins' [6] modification of Cullen's colorimetric method. The blood sugar and lactic acid were determined in a tungstic acid filtrate by means of Clausen's [7] sulphuric acid method for lactic acid and the Folin-Wu [8] method for blood sugar. The urine p_H and hourly excretion of water, nitrogen, inorganic phosphorus and lactic acid were determined before and during the electrical stimulation.

TABLE 1.—*Blood Analysis Before and After Muscular Stimulation with Slowly Interrupted Faradic Current*

Experiment	Duration of Faradic Stimulation, Min.		Oxygen Content, per Cent by Vol.	Oxygen Capacity, per Cent by Vol.	Oxygen Saturation, per Cent by Vol.	Carbon Dioxide Content, per Cent by Vol.	p_H	Sugar, Mg. per 100 Cc.	Lactic Acid, Mg. per 100 Cc.
1	20	Before	7.0	17.9	39	55.6	....	96	16.1
		After	12.6	17.7	71	50.8	....	99	16.6
2	21	Before	8.3	18.5	45	46.8	7.33	87	16.1
		After	12.2	18.3	67	46.2	7.38	83	17.4
3	22	Before	14.8	21.7	68	46.7	7.47	101	17.9
		After	11.1	....	51	47.3	7.48	95	17.7
4	27	Before	11.5	15.5	74	47.2	7.29	163	34.4
		After	8.6	16.4	52	49.6	7.34	165	18.0
5	21	Before	13.9	21.5	65	52.0	7.42	109	19.3
		After	12.1	....	56	49.7	7.43	110	21.2

TABLE 2.—*Urinary Excretion Before and During Muscular Stimulation with a Slowly Interrupted Faradic Current*

Experiment		Volume, Cc. per Hour	Specific Gravity	p_H	Lactic Acid, Mg. per Hour	Total Nitrogen, Mg. per Hour	Inorganic Phosphorus, Mg. per Hour	Notes
1	Before	16	.....	5.4	3.1	369	45	
	During	30	.....	5.2	4.6	550	44	
2	Before	28	1.026	5.0	3.7	316	36	Drank 2 glasses of water before electrical stimulation
	During	58	1.022	5.2	5.2	431	55	
3	Before	39	1.027	5.6	3.0	427	28	
	During	69	1.025	5.6	2.5	667	58	
4	Before	31	1.022	5.0	4.2	220	19	Both urines showed a heavy cloud of albumin; sugar negative
	During	93	1.020	5.4	21.5	499	40	
5	Before	60	1.019	5.8	9.8	494	15	
	During	43	1.026	5.2	3.4	367	16	

RESULTS

It seems clear from the results of these experiments, the data of which are presented in the accompanying tables, that the muscular activity induced under the conditions of faradic stimulation employed is without effect on the lactic acid content of the blood or the acid-base equilibrium. Lactic acid readily passes from tissues to blood and excessive formation of it, such as occurs during severe exercise or marked anoxemia, causes a large increase in the concentration of lactic acid in the circulating blood. No such results were found in these experiments. The lactic acid concentration of the blood and the urinary excretion of lactic acid were essentially unchanged at the end of twenty minutes of faradic stimulation. In experiment 4, an initial high blood lactic acid content returned to a normal value coincident with a definite increase in the rate of lactic acid excretion. A slight increase in blood p_H also occurred. The changes in this experiment are perhaps referable to the decidedly abnormal condition of the subject (diabetes and albuminuria) and do not lend themselves to ready interpretation. The oxygen content of the venous blood (arm vein) rose decidedly in two cases (experiments 1 and 2). In the other three experiments, however, there was a fall in the oxygen content and in the percentage of oxygen saturation. The blood volume, as

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4. Hill, A. V.; Long, C. N. H., and Lupton, H.: Proc. Roy Soc. Med., Series B **96**, 438, 1924.
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8. Folin, Otto: Laboratory Manual of Biological Chemistry, ed. 3, New York, D. Appleton & Co., 1922, p. 253.

far as it is measured by the oxygen capacity, remained constant during the experimental procedure. Significant changes in the blood sugar were not observed.

An increased excretion of water, nitrogen and inorganic phosphorus was observed in most of the experiments during the time that the electrical stimulation was given. These observations, in the light of Steel's [1] work, are suggestive of increased metabolism as a result of the electrical stimulation of the nature under consideration. It should be mentioned, however, that the subjects of these experiments were not under any dietary control, and the influence of the dietary regimen on the composition of the urine during the experimental period remains undetermined.

In a previous communication [9] it was shown that whereas the application of external heat tends to produce an alkalosis, vigorous massage did not cause any change in the acid-base equilibrium of the blood and did not produce any increase in lactic acid. It should be pointed out that the massage administered was as severe as the muscles could well stand, compatible with the avoidance of trauma. The muscular contractions which accompany faradic stimulation, however, do not approach the full muscular capacity and were limited by the undesirable subjective effects of the electrical shock. It cannot therefore be said that the fullest theoretical degree of vigorous and sustained electrical stimulation would not induce increased production of lactic acid. Within the limits of therapeutic practice, however, which constitutes the point of chief interest, this is not forthcoming.

SUMMARY

The effect of vigorous, slowly interrupted faradic stimulation of muscles on the composition of the blood and urine has been determined in five experiments. The electrical stimulation was administered according to modern therapeutic practice.

No change in the lactic acid concentration or the acid-base equilibrium of the blood or urine was observed as a result of the muscular activity produced by the current.

An increased urinary excretion of water, nitrogen and inorganic phosphorus during the time of electrical stimulation suggests that one effect of this type of electrical treatment is to increase metabolic processes.

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9. Pemberton, Ralph; Cajori, F. A., and Crouter, Caroline Y.: The Physiologic Effect of Massage, J. A. M. A. **83**: 1761 (Nov. 29) 1924.

Pathologic Anatomy and Disease.—The separation of pathologic anatomy from the study of disease as a whole was good neither for pathologic anatomy nor for medicine. Pathologic anatomy or pathology, or whatever we call it, is not one of the medical sciences, or a contributory science to medicine. It is a part of medicine itself, unless medicine is to be restricted to the cure of disease. The science of medicine is no more applied pathology than pathologic anatomy itself is applied anatomy and histology. The study of pathologic anatomy is, or should be, only one of the methods for investigating disease, and the closer it can be interwoven with the other methods the more likely are its results to be of value. The field of pathologic anatomy is the study of the effects of disease. To really learn about disease, that is, to understand the alterations in function and structure which are exhibited by the abnormal individual, the individual himself must be studied, during life as well as after death, and this study must be combined with an attempt to explain the abnormal phenomena in the light of present knowledge and by the aid of all suitable methods. This is the science of medicine, if such there is, and if there is not such a science there ought to be. —Cole, Rufus: *Science* **67**:50 (Jan. 20) 1928.

ONE HUNDRED CASES OF APPARENTLY CURED POLLEN HAY-FEVER *

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During the past ten years in the treatment of hay-fever I have not only attempted to procure good results for the ensuing season but have also had in mind and hoped for permanent results. This paper, therefore, deals only with those patients who have been treated and have probably been under observation for a long enough time to justify the word cured. A series of 100 patients is presented and the data are grouped into three tables.

In table 1 are presented the records of thirty-nine patients who were treated until the cutaneous tests with the pollens, to which they were previously sensitive, were either negative or practically negative, and who have been free from symptoms of hay-fever for a period of three or more years since the cessation of treatment. In table 2 are presented another group of thirty-nine patients in whom equally satisfactory clinical results were obtained; in no instance, however, did the cutaneous test become negative and in some cases the test was not appreciably modified, although most of the patients did show a decreased sensitivity. In table 3 are presented twenty-two patients who have been free from symptoms for two years since treatment was discontinued. Seventeen were treated until the cutaneous test with the causative pollen was negative or practically so and the remaining five, although not giving negative reactions, showed a more or less diminished sensitivity.

Although in recent years the tendency has been toward shortening the interval between inoculations even to that of giving two treatments a day, the patients presented in this paper were usually treated at weekly intervals, and in only an occasional case was treatment given as often as every five days. In most cases the treatment was entirely preseasonal; thus, treatment was begun from thirteen to sixteen weeks previous to the usual onset of hay-fever symptoms. In the few instances in which patients presented themselves from one or two weeks too late, one or two inoculations were given after the onset of symptoms; however, this was unusual. A detailed description of the method of preseasonal treatment used in this paper, of the method of making the pollen extracts, and of the method of testing the patients has been presented in a former paper.[1]

All the tables are so similar that one explanation suffices. In the first column, a number represents the name of a patient. The second and third columns are headed by the word "age," the first of these two columns giving the age of the patient when the hay-fever began and the second column giving the number of years that the patient had hay-fever before treatment; therefore, when these two numbers are added together the age of the patient when treatment was begun is determined. The series of columns headed "years treated and result" represent the various years that the patient was treated and the result from treatment during these years. The series of columns headed "years not treated and result" represent the years in

* From the Medical Clinic of the Peter Bent Brigham Hospital. All the patients who were treated in the years 1918 and 1919, a total of twenty-three, were treated in the Outdoor Clinic of the hospital; the remaining cases were treated in private practice.

1. Walker, I. C.: Frequent Causes and the Treatment of Seasonal Hay-Fever, Arch. Int. Med. **28**: 71-118 (July) 1921.

which no treatment was given and the condition of the patient during the respective years that he did not have treatment. The last two columns are headed by the word "tests"; the first of these columns, headed by the word "before," represents the sensitiveness of the patient or to what dilution of the pollen protein the patient reacted before treatment was given, and the second column, headed by the word "later," represents the sensitiveness of the patient or to what degree the patient reacted to the pollen protein the first year after treatment was omitted. The initials and numerals in the column headed by the various dates are to be interpreted as follows: O. K. means that there were no hay-fever symptoms; P. F., that the patient was practically free from hay-fever—that, as a matter of fact, there may not have been any symptoms of real hay-fever, but as the patient may have sneezed occasionally, the years 1922 to 1926 inclusive no treatment was given and the patient did not have hay-fever.

In order to save space the sex of the patient is not given, but it might be well to state that the sex did not seem to make any difference in the results. Furthermore, since for the same reason the type of hay-fever is not indicated, it may be stated here that about one fourth of the patients had hay-fever during the period from late in May to the middle of July, and the remaining three fourths of the patients had autumnal hay-fever beginning in August and terminating with a hard frost.

In table 1 it may be noted that nineteen patients were free from hay-fever symptoms for a period of three years after treatment was discontinued. The pollen test was negative in nine of these, and in six others the pollen gave only a doubtful reaction; the remaining

TABLE 1.—*Results of Treatment in Group 1*

Patient	Age		Years Treated and Result						Years Not Treated and Result						Tests	
			1918	1919	1920	1921	1922	1923	1926	1925	1924	1923	1922	1921	Before	Later
1	8	5	.....	P.F.	O.K.	O.K.	.....	.....	O.K.	O.K.	O.K.	O.K.	O.K.	.....	1:5,000+	Pol. ±
2	18	3	.....	P.F.	O.K.	.....	.....	.....	O K.	O.K.	O.K.	O.K.	O.K.	O.K.	1:5,000+	Pol. ±
3	8	2	.....	.....	50	75	P.F.	O.K.	O.K.	O.K.	O.K.	.....	.....	.....	1:1,000+	Pol. 0
4	9	3	P.F.	O.K.	O.K.	.....	.....	.....	O.K.	O.K.	O.K.	O.K.	O.K.	O.K.	1:1,000+	Pol. 0
5	35	5	.....	75	P.F.	O.K.	.....	.....	O K.	O.K.	O.K.	P.F.	.....	.....	1:1,000+	Pol. 0
6	14	17	50	O.K.	O K.	P.F.	P.F.	O.K.	O.K.	O.K.	O.K.	.....	.....	.....	1:5,000+	Pol. 0
7	40	5	.....	.....	O.K.	75	P.F.	O.K.	O.K.	O.K.	O K.	.....	.....	.....	1:5,000+	Pol. ±
8	39	10	.....	.....	.....	75	P.F.	O.K.	O K.	O.K.	O.K.	.....	.....	.....	1:10,000+	Pol. ±
9	20	6	O.K.	P.F.	P.F.	75	O.K.	O.K.	O.K.	O.K.	O.K.	.....	.....	.....	1:5,000+	1:100+
10	25	10	O.K.	O.K.	O.K.	.....	.....	.....	O.K.	O.K.	O.K.	O.K.	O.K.	O.K.	1:5,000±	Pol. 0
11	30	20	.....	.....	.....	O.K.	P.F.	O.K.	O.K.	O.K.	O.K.	.....	.....	.....	1:10,000±	Pol. 0
12	26	8	O.K.	O.K.	P.F.	P.F.	P.F.	O.K.	O.K.	O.K.	O.K.	.....	.....	.....	1:10,000±	1:100+
13	15	3	.....	.....	.....	O.K.	O.K.	.....	O.K.	O.K.	O.K.	O.K.	.....	.....	1:5,000+	Pol. 0
14	39	10	.....	.....	.....	75	P.F.	O.K.	O.K.	P.F.	O K.	.....	.....	.....	1:10,000+	Pol. +
15	20	10	.....	.....	75	P.F.	O.K.	.....	O.K.	O.K.	O.K.	O.K.	.....	.....	1:20,000+	1:500+
16	29	10	.....	.....	.....	.....	P.F.	O.K.	O.K.	O.K.	O.K.	.....	.....	.....	1:1,000+	Pol. 0
17	22	3	.....	.....	.....	.....	P.F.	O.K.	O.K.	O.K.	O.K.	.....	.....	.....	1:1,000+	Pol. 0
18	20	10	.....	.....	.....	O.K.	O.K.	.....	O.K.	O.K.	O.K.	O.K.	.....	.....	1:5,000+	Pol. ±
19	25	10	.....	.....	75	P.F.	O.K.	O.K.	O.K.	O.K.	O.K.	.....	.....	.....	1:20,000+	Pol. ±
20	50	10	P.F.	O.K.	O.K.	.....	.....	.....	O.K.	O.K.	O.K.	O.K.	O.K.	O.K.	1:5,000+	1:100+
21	11	8	....	.....	.....	.....	O.K.	O.K.	O.K.	O.K.	O.K.	.....	.....	.....	1:10,000+	1:100+
22	9	3	.....	.....	.....	.....	P.F.	O.K.	O.K.	O.K.	O.K.	.....	.....	.....	1:5,000+	1:100+
23	25	7	.....	.....	P.F.	O K.	O.K.	O.K	O.K.	O.K.	O.K.	.....	.....	.....	1:5,000+	Pol. 0
24	52	5	.....	.....	.....	P.F.	O.K.	O.K.	O.K.	O.K.	O.K.	.....	.....	.....	1:5,000+	Pol. 0
25	29	10	.....	.. ..	.....	.....	P.F.	O.K.	O.K.	O.K.	O.K.	.....	.....	.....	1:10,000+	Pol. 0
26	31	10	.....	.....	.....	P.F.	O.K.	O.K.	O.K.	O.K.	O.K.	.....	.....	.....	1:10,000+	Pol. 0
27	5	42	.....	75	75	O.K.	O.K.	.....	O.K.	O.K.	O.K.	O K.	.....	.....	1:5,000+	Pol. ±
28	5	4	.....	.....	O.K.	.....	.....	.....	O.K.	O.K.	O.K.	O.K.	O.K.	O.K.	1:5,000+	Pol. 0
29	27	5	.....	.....	.. ..	.....	O K.	.....	O.K.	O.K.	O.K.	O.K.	.....	.....	1:10,000+	Pol. ±
30	23	5	.....	.....	.....	.....	O.K.	.....	O K.	O.K.	O.K.	O.K.	.....	.....	1:10,000±	Pol. +
31	26	6	.....	.....	O.K.	.....	.....	.....	O K.	O.K.	O K.	O K.	O.K.	O K.	1:5,000+	Pol. 0
32	18	5	.....	.....	O.K.	.....	.....	.....	O.K.	O.K.	O.K.	O K.	O.K.	O.K.	1:10,000+	Pol. 0
33	25	7	.....	.....	O.K.	.....	.....	.....	O.K.	O.K.	O.K.	O.K.	O.K.	O K.	1:1,000+	Pol. ±
34	6	7	.. ..	.....	.....	.....	P.F.	.....	O.K.	O.K.	P.F.	P.F.	.....	.....	1:20,000±	Pol. ±
35	8	2	.....	.....	.....	.....	P.F.	.....	F.F.	P.F.	P.F.	P.F.	.....	.....	1:5,000+	Pol. 0
36	12	8	.....	.....	.....	.....	P.F.	.....	P.F.	P.F.	P.F.	P.F.	.....	.....	1:5,000+	Pol. ±
37	26	8	.....	.....	O.K.	.....	.....	.....	O.K.	O.K.	O.K.	O.K.	O.K.	O.K.	1:1,000+	Pol. 0
38	37	10	.....	.....	.....	75	P.F.	O.K.	O.K.	O.K.	O.K.	.....	.....	.....	1:10,000+	Pol. ±
39	20	15	.....	.....	.....	75	O.K.	O.K.	O.K.	O.K.	O.K.	.....	.....	.....	1:20,000+	Pol. ±

perhaps no more than at any time of year, the result was interpreted as P. F. rather than as perfect. By 75 is meant that the patient considered himself benefited to that degree; by 50, that he estimated that he had about half as much hay-fever as he was accustomed to have before treatment, and by N. B. that no benefit resulted from treatment.

To illustrate this interpretation of the tables, patient 1 in table 1 may serve as an example. In this patient hay-fever began when he was 8 years old, and as he had had hay-fever five years before he presented himself for treatment, he was therefore 13 years of age when first treated. He was first treated in 1919, and as a result he became practically free from hay-fever. As the beginning of treatment in 1919 he gave a positive cutaneous test with a dilution of 1:5,000 of the pollen with which he was treated and which was considered to be the causative one. In 1920 and 1921 the patient was treated with perfect results. By 1922 the cutaneous test had become very questionable with the pollen with which he had been treated, so that no treatment was deemed necessary. Therefore, during four patients reacted positively to a 1:100 dilution but did not react to a greater dilution. Before treatment three of these patients reacted positively to only a 1:1,000 dilution of the pollen extract; six reacted to a 1:5,000 dilution; eight reacted to a 1:10,000 dilution, and the remaining two patients reacted to a 1:20,000 dilution. Therefore, there was a marked decrease in the sensitivity of most of the patients: in two, from a positive reaction with a 1:20,000 dilution to a doubtful reaction with the whole pollen; in three, from a dilution of 1:10,000 to a doubtful reaction, and in three others to a negative test. Of this group, five were treated two years; seven, three years; four, four years, and three, six years. In other words, it required six years' treatment in three patients to accomplish what four years' treatment did with four patients and what three years' treatment did in seven cases and two years' treatment in five cases.

Seven of the patients listed in table 1 have been free from symptoms for a period of four years since treatment was discontinued. With these, the cutaneous tests showed the following decrease in sensitivity: one

patient from 1 : 1,000 positive to pollen negative; two from 1 : 5,000 positive to pollen doubtful; one from 1 : 5,000 positive to pollen negative; one from 1 : 10,000 positive to 1 : 500 positive; one from 1 : 10,000 positive to pollen doubtful, and one from 1 : 20,000 positive to 1 : 500 positive. The respective ages of the patients were 18, 28, 30, 30, 32, 40 and 47, and the number of years' treatment required was one year in two cases, two years in two cases, three years in two cases and four years in one case.

Nine patients have been free from symptoms for a period of six years since the omission of treatment. The cutaneous tests in these were changed as follows: two from a 1 : 1,000 dilution to negative; one from a 1 : 1,000 dilution to a doubtful pollen reaction; one from a 1 : 5,000 dilution to a doubtful pollen reaction; three from a 1 : 5,000 dilution to a negative test, one from a 1 : 5,000 dilution to a 1 : 100 dilution positive, and one from 1 : 10,000 to a negative reaction. With five of these patients only one year's treatment was required, whereas another patient required two years' treatment and three required three years' treatment.

The three patients numbered 34, 35 and 36 are the only ones listed in the table who have not been entirely free from symptoms; however, since these patients complain only of sneezing, chiefly in the early morning or when the weather is cool or damp, also since these patients are subject to these symptoms more or less throughout the year and furthermore since the pollen tests were changed from 1 : 20,000 dilution positive to pollen doubtful in one, and from a 1 : 5,000 dilution positive to pollen negative in another, with a doubtful test in the third, it is quite evident that as regards true pollen hay-fever these patients are probably cured.

Of the thirty-nine patients recorded in table 1, fifteen were under 30 years of age when treatment was begun and the remaining twenty-four were 30 or more years of age. The duration of hay-fever previous to treatment varied from two to forty-two years. A careful analysis of the ages of onset and the duration of hay-fever, and also of the age of the patient when treatment was begun, does not reveal any facts of importance as to prognosis. In fact, it would seem that, provided satisfactory treatment for hay-fever is given, the results from hay-fever treatment depend entirely on the individual who is treated.

The thirty-nine patients presented in table 2 so closely resemble those presented in table 1 that only the points wherein there is a difference need be commented on.

The results of cutaneous tests are omitted from the table because they may be summarized in a few words. None of the patients gave a negative pollen test after the completion of the treatment; in fact, none gave a reaction nearer negative than a dilution of 1 : 5,000 of the pollen extract. Many patients seemed to be just as sensitive to the pollen extract after treatment was discontinued as before treatment was begun. In those cases in which the cutaneous test was changed, the difference was usually so small that variations in the pollen extracts for the making of the tests at different times could readily account for the change in sensitivity. Nevertheless, twenty-five of the patients have been free from symptoms for three or more successive pollen seasons without any treatment.

In table 2, more patients obtained poor results from the first year's treatment than in table 1; there were more patients who reported a 50 per cent or a 75 per cent benefit than in table 1. This would seem to show that more patients were resistant to treatment. The final results, however, with the first twenty-five patients in table 2 were as good as those in table 1.

The last fourteen patients in table 2 may be grouped for discussion. In only two was a perfect result obtained from treatment, and in none was a perfect result obtained after treatment was discontinued. The results from pollen treatment, however, must be consid-

TABLE 2.—*Results of Treatment in Group 2*

Patient	Age		Years Treated and Result					Years Not Treated and Result					
			1919	1920	1921	1922	1923	1926	1925	1924	1923	1922	1921
40	20	15	O.K.	O.K.	O K.	O.K.	O.K.	O.K.	O.K.	O.K.	.....	.....	.....
41	56	14	P.F.	O.K.	O K.	.....	.....	O.K.	O.K.	O.K.	O.K.	O K.	.....
42	35	20	.....	P.F.	O K.	O.K.	.....	O.K.	O.K.	O.K.	O.K.	.....	.....
43	20	11	.....	.....	P.F.	P.F.	O.K.	O.K.	O.K.	O.K.	.....	.....	.....
44	6	26	O.K.	O.K.	O K.	.....	.....	O.K.	O K.	O.K.	O.K.	O.K.	.....
45	34	12	75	50	75	P.F.	O.K.	O.K.	O.K.	O.K.	.....	.....	.....
46	10	54	.....	O.K.	O.K.	O.K.	O.K.	O.K.	O.K	O.K.	.....	.....	.....
47	20	35	P.F.	O.K.	.....	.....	.....	O.K.	O.K.	O.K.	O.K.	O K.	O.K.
48	12	6	75	O.K.	O.K.	.....	.....	O.K.	O.K.	O.K.	O.K.	O.K.	.....
49	11	3	.....	.....	75	O.K.	O K.	O.K.	O.K.	O.K.	.....	.....	.....
50	6	30	.....	.....	50	P.F.	O.K.	O.K.	O.K.	O.K.	.....	.....	.....
51	30	5	.....	.....	.....	O.K.	O.K.	O.K.	O.K.	O.K.	.....	.....	.....
52	20	20	.....	.....	.....	O.K.	O.K.	O.K.	O.K.	O.K.	.....	.....	.....
53	2	28	.....	O.K.	O.K.	O.K.	.....	O.K.	O.K.	O.K.	O.K.	.....	.....
54	14	7	.....	75	P.F.	O.K.	.....	O.K.	O.K.	O.K.	O.K.	.....	.....
55	24	25	50	P.F.	O.K.	.....	.....	O.K.	O.K.	O.K.	P.F.	P.F.	.....
56	35	3	.....	.....	75	P.F.	O.K.	O.K.	O.K.	O.K.	.....	.....	.....
57	40	10	.....	.....	.....	P.F.	O K.	O.K.	O.K.	O.K.	.....	.....	.....
58	25	10	.....	.....	.....	O.K.	O.K.	O.K.	O.K.	O.K.	.....	.....	.....
59	35	10	.....	.....	O.K.	.....	.....	O.K.	O.K.	O.K.	O.K.	.....	.....
60	45	9	.....	O.K.	.....	.....	.....	O.K.	O.K.	O.K.	O.K.	O.K.	O.K.
61	5	25	O.K.	O.K.	O.K.	.....	.....	O.K.	O.K.	O.K.	O.K.	O.K.	.....
62	24	6	.....	.....	P.F.	O.K.	.....	O.K.	O.K.	O.K.	O.K.	.....	.....
63	25	20	.....	.....	.....	75	O K.	O.K.	O.K.	O.K.	.....	.....	.....
64	20	15	.....	.....	75	P.F.	O.K.	O.K.	O.K.	O.K.	.....	.....	.....
65	2	34	75	P.F.	P.F.	.....	.....	P.F.	P.F.	P.F.	P.F.	P.F.	.....
66	21	10	75	P.F.	P.F.	P.F.	.....	P.F.	P.F.	O.K.	P.F.	.....	.....
67	8	4	.....	P.F.	P.F.	P.F.	.....	P.F.	P.F.	P.F.	P.F.	.....	.....
68	9	4	75	P.F.	P.F.	P.F.	.....	P.F.	P.F.	P.F.	P.F.	.....	.....
69	38	8	.....	.....	50	O.K.	.....	P.F.	P.F.	P.F.	O.K.	.....	.....
70	20	10	.....	50	75	P.F.	P.F.	P.F.	P.F.	P.F.	.....	.....	.....
71	25	10	.....	.....	.....	P.F.	P.F.	P.F.	P.F.	P.F.	.....	.....	.....
72	32	10	.....	P.F.	P.F.	P.F.	P.F.	P.F.	P.F.	P.F.	.....	.....	.....
73	9	8	P.F.	P.F.	P.F.	P.F.	P.F.	P.F.	P.F.	P.F.	.....	.....	.....
74	33	5	.....	50	50	P.F.	P.F.	P.F.	P.F.	P.F.	.....	.....	.....
75	9	6	.....	.....	75	P.F.	P.F.	P.F.	P.F.	P.F.	.....	.....	.....
76	15	6	.....	.....	P.F.	P.F.	P.F.	P.F.	P.F.	P.F.	.....	.....	.....
77	..	..	.....	.....	75	P.F.	P.F.	P.F.	P.F.	85	.....	.....	.....
78	40	23	75	P.F.	P.F.	P.F.	.....	P.F.	P.F.	P.F.	P.F.	.....	.....

ered to be satisfactory because whatever symptoms these patients had during the pollen season were not only very slight but were present at various times throughout the year. Furthermore, some of the patients were sensitive to animal emanations and to fruits which at times could not be avoided, and others had vasomotor rhinitis, which complicated the interpretation of the results of hay-fever treatment.

TABLE 3.—*Results of Treatment in Group 3*

Patient	Age		Years Treated and Result					Not Treated		Tests	
			1921	1922	1923	1924	1925	1927	1926	Before	Later
79	31	16	.....	O.K.	O.K.	O.K.	O.K.	O.K.	O.K.	1:5,000±	Pol. 0
80	30	5	P.F.	P.F.	P.F.	P.F.	O.K.	O.K.	O.K.	1:5,000+	Pol. +
81	14	17	.....	.....	50	75	O.K.	O.K.	O.K.	1:5,000+	Pol. ±
82	30	5	P.F.	O.K.	O.K.	O.K.	O.K.	O.K.	O.K.	1:10,000+	Pol. ±
83	7	3	75	75	P.F.	P.F.	O.K.	O.K.	O.K.	1:10,000+	1:100+
84	3	4	.....	P.F.	P.F.	P.F.	O.K.	O.K.	O.K.	1:10,000±	1:100+
85	8	4	.....	.....	.....	.....	O.K.	O.K.	O.K.	1:1,000+	Pol. 0
86	10	2	.....	.....	P.F.	P.F.	O.K.	O.K.	O.K.	1:10,000±	Pol. ±
87	20	8	.....	.....	P.F.	O.K.	O.K.	O.K.	O.K.	1:10,000±	Pol. 0
88	35	6	.....	.....	P.F.	P.F.	O.K.	O.K.	O.K.	1:10,000+	Pol. ±
89	6	5	.....	75	P.F.	O.K.	O.K.	O.K.	O.K.	1:20,000±	1:100+
90	11	5	.....	.....	O.K.	O.K.	O.K.	O.K.	O.K.	1:20,000±	Pol. ±
91	27	5	50	75	P.F.	O.K.	O.K.	O.K.	O.K.	1:10,000±	Pol. ±
92	26	4	.....	.....	75	P.F.	O.K.	O.K.	O.K.	1:10,000±	Pol. ±
93	40	3	.....	.....	.....	P.F.	O.K.	O.K.	O.K.	1:5,000±	Pol. 0
94	30	15	.....	75	P.F.	O.K.	O.K.	O.K.	O.K.	1:10,000±	Pol. ±
95	34	12	.....	.....	.....	75	O.K.	O.K.	O.K.	1:20,000±	Pol. ±
96	23	5	.....	75	75	P.F.	O.K.	O.K.	O.K.		
97	29	10	.....	.....	P.F.	P.F.	O.K.	O.K.	O.K.		
98	4	4	.....	.....	O.K.	O.K.	O.K.	O.K.	O.K.		
99	29	10	.....	.....	50	75	O.K.	O.K.	O.K.		
100	31	9	.....	.....	.....	75	O.K.	O.K.	O.K.		

In table 3 are presented twenty-two patients who have been free from symptoms for a period of two years since treatment was discontinued. In five of these patients there was little or no change in the sensitivity as demonstrated by the cutaneous test. In the first seventeen cases, there was a marked decrease in sensitivity. One patient who gave a positive test with a 1:1,000 dilution of the pollen extract before treatment became negative to the whole pollen later; two patients who were previously positive with a 1:5,000 dilution later became negative, and another gave only a doubtful reaction to the pollen. Of the nine patients who reacted more or less positively with a 1:10,000 dilution of the pollen extract before treatment, one became negative to the whole pollen, six gave only a doubtful reaction, and two gave a positive test with a 1:100 dilution of the pollen extract. Of the three patients who gave a more or less positive test with a 1:20,000 dilution, one still reacted to a 1:100 dilution and the other two gave only a doubtful reaction with the whole pollen.

The first seventeen patients closely duplicate those presented in table 1, and the last five patients those in table 2, the only exception being that the patients listed in table 3 have had an opportunity of experiencing only two years of relief since omission of treatment. However, it seems fair to assume that they will continue to be free from hay-fever for as long a period as those presented in the first two tables.

Among the patients presented in this paper were several who had more or less asthmatic symptoms during their hay-fever season. In these cases the asthma was entirely relieved. It is not uncommon for asthma to develop at the end of the hay-fever season; in fact, not infrequently hay-fever seems to predispose to asthma. In this series of patients, however, there has not been any occurrence of asthma since treatment was begun or since treatment has been omitted.

CONCLUSIONS

The 100 patients discussed here have probably been cured. All have been without symptoms for a period of two years, and seventy-eight have gone three or more years without treatment.

In twenty-two cases the cutaneous test with the causative pollen was changed from markedly positive to negative; in twenty-two others the cutaneous test was only very doubtful when treatment was discontinued; in three others the test was positive only with the whole pollen, and in nine others no greater dilution than 1:100 or 1:500 evoked a reaction. In forty-four cases the cutaneous test was not markedly changed.

The patients were treated at weekly intervals for a period of from thirteen to sixteen weeks previous to the usual onset of their symptoms. In all cases careful cutaneous tests were performed with the various dilutions of the causative pollen protein in order to determine with what dilution or strength of pollen protein treatment should be begun, and furthermore, because such tests are a guide in determining not only the successive increases in the dosage but also what may be considered satisfactory treatment for each patient.

When the pollen test becomes negative, it seems to be safe to stop hay-fever treatment. With the patients in whom the pollen test does not become negative, it seems desirable that the patient should have had at least one season and preferably two seasons of complete freedom from hay-fever while being treated before treatment should be discontinued.

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ACUTE COCAINE INTOXICATION

PROPHYLAXIS AND TREATMENT WITH PHENOBARBITAL *

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Intoxications resulting from the use of cocaine are observed very frequently by rhinologists, who are still dependent on this drug to secure a satisfactory intranasal anesthesia. A committee appointed by the Council on Pharmacy and Chemistry to investigate the subject found that a large number of the fatalities and other disastrous sequelae were not reported in the literature. They found further that a large number of the ill results were seen even in instances in which only small amounts of dilute solutions of the alkaloid had been used. Syncope and even death resulting from the use of cocaine were not at all uncommon, especially during the earlier period when it was used by injection. The urge for a drug having the anesthetic qualities of cocaine but not its toxicity has caused a number of newer anesthetics to be elaborated, none of which have been able to duplicate its ready adsorbability and success as a local application for the anesthesia of mucous membrane. Consequently, it is in widespread use among rhinologists, who, as a rule, are cognizant of its dangers.

The ill effects consequent on the use of cocaine may occur in two ways: through the administration of a toxic dose or because of the presence of hypersusceptibility in the patient. The effect due to the former may in a large measure be avoided by careful consideration of the dosage, but reactions subsequent to the exhibition of the alkaloid in a susceptible person cannot as a rule be foretold. Another important source of intoxication is the mistake of injecting cocaine under the impression that it is procaine hydrochloride. This has

* From the clinic of Drs. J. C. Beck and H. L. Pollock.

repeatedly occurred, and it is the practice in many hospitals and clinics to color their cocaine solutions so as to distinguish them easily. In cases of idiosyncrasy, however, mild and even dangerous intoxication may result from the use of minute amounts. Since the use of cocaine as a local anesthetic on mucous membrane has not as yet been successfully equaled by any of the newer drugs, any means that may be employed to make it safer are to be welcomed.

The pharmacodynamics of cocaine have been fairly well established. The drug, aside from its local anesthetic properties, is known as a cerebral stimulant. In deaths following cocaine poisoning there is always a preceding hyperpnea associated with clonic convulsions. The hyperpnea soon becomes irregular and the respirations cease after a period of respiratory flutter, which is evidently due to an exhaustion of the respiratory center consequent to the overstimulation. The heart continues to beat after the breathing has ceased. The clonic convulsions and the hyperpnea are due to an overstimulation of the cerebral cortex and respiratory center.

Morita [1] has shown that the typical respiratory failure with the preceding flutter type of breathing does not occur in the decerebrate rabbit, and Feinberg [2] has observed a marked increase in the tolerance to cocaine in decerebrate laboratory animals. Richet [3] observes that the sensitivity of different animals to cocaine is in direct proportion to the complexity or state of development of the brain, and apparently man is most sensitive. In view of all this, it is not unnatural to suggest the use of some pharmacodynamic antagonist in the treatment of cocaine intoxication; namely, a cerebral depressant. Ether, chloral hydrate, and morphine have been used with but little success. Hofvendahl [4] and Tatum, Atkinson and Collins [5] have reported on the successful use of the barbituric hypnotics in the treatment of cocaine poisoning in experimental animals, especially in the monkey (*Macacus rhesus*). They used a solution of soluble barbital. They found that the minimal lethal dose of a subcutaneous injection of cocaine could be raised several fold by a previous intravenous injection of the soluble barbital. They showed further that animals in cocaine convulsions recovered if given a proper dose of the soluble barbital, provided the convulsions were not allowed to continue too long. The intravenous injection of the hypnotic caused an immediate cessation of the convulsions, and it was apparent that the likelihood of recovery was inversely proportional to the time the convulsions were allowed to continue. Hofvendahl recommends the use of 20 cc. of a 5 per cent solution of soluble barbital as an intramuscular injection immediately on the appearance of severe symptoms of poisoning, but warns that when the stage of convulsions has been reached, intravenous administration alone may be absolutely necessary. Tatum and his co-workers advise the use of 100 mg. of soluble barbital dissolved in 5 cc. of a saturated solution of paraldehyde per kilogram of body weight. As such a solution is stable, they advocate the preparation of a stock solution to be used in an emergency.

1. Morita: Arch. f. exper. Path. u. Pharmakol. **78**: 208, 1915.
2. Feinberg: Berl. klin. Wchnschr. **24**: 166, 1887.
3. Richet: Arch. internat. de pharmacol. **4**: 299, 1898.
4. Hofvendahl, A.: Monatschr. f. Ohrenh. **55**: 887, 1921; Ztschr. f. Hals-, Nasen- u. Ohrenh. **1**: 233, 1922; Acta oto-laryng. **4**: 238, 1922.
5. Tatum, A. L.; Atkinson, A. J., and Collins, K. H.: Acute Cocaine Poisoning, J. A. M. A. **84**: 1177 (April 18) 1925; J. Pharmacol. & Exper. Therap. **26**: 325 (Dec.) 1925. Tatum, A. L., and Collins, K. H.: Acute Cocaine Poisoning and Its Treatment in Monkey (Macacus Rhesus), Arch. Int. Med. **38**: 405 (Sept.) 1926.

In light of the foregoing facts, we were led to use phenobarbital in a case of cocaine sensitiveness. A woman in whom symptoms of intoxication appeared as soon as cocaine was applied to her nose failed to show any evidence of an idiosyncrasy to the drug if 3 grains (0.2 Gm.) of phenobarbital was administered thirty minutes before the application of the alkaloid. This and a few similar cases in which the use of the drug was apparently successful led to the advocation, in a preliminary report,[6] of the use of phenobarbital as a prophylactic in persons known to be sensitive to the drug. It was also suggested that phenobarbital might be used to supplant morphine as a preoperative sedative when it would also act in its prophylactic capacity. Leshure,[7] some time later, reported the successful use of barbital in a similar manner.

A careful review of results experienced with the drug used thirty minutes before the administration of cocaine more than justifies the indication for its employment in that manner. During the period between April 1, 1925, and April 1, 1926, there were performed at the clinic 416 operations under cocaine anesthesia. Of this number, seventy-eight, or about 19 per cent, showed some signs of intoxication. It is true that in the majority of instances the symptoms were of a mild nature and consisted mainly of a marked restlessness, tremor, cardiac palpitation, pallor, sweat and a decided tendency toward loquacity. However, a few cases evidenced symptoms of a profound intoxication, although none ever progressed to the stage of convulsions. During the last three months of this period there was an opportunity of observing the response of sixteen patients with cocaine intoxication to the administration of phenobarbital. In all these cases, the symptoms were relieved a short time after the ingestion of the hypnotic. In similar cases a very much longer time was usually required for recovery. These observations definitely established the value of the drug and led to the publication of the preliminary report.

Since that time there has been substituted 3 grains (0.2 Gm.) of phenobarbital by mouth thirty minutes before operation for the preoperative injection of morphine. We were impressed by its efficacy as a preoperative sedative and have not had any occasion to use morphine since. That it served as a prophylactic in the prevention of cocaine reactions may be gathered from a comparison of the number of intoxications that were observed during the preceding year in which phenobarbital was not used and during the following year when it was used. In the past year, in which the hypnotic was given as described, 391 operations were performed in the clinic under local cocaine anesthesia, and in this number there were only two reactions. In one case in which the symptoms were not typical, a diagnosis of hysteria was made because of the presence of nasal, corneal and pharyngeal anesthesia. The other occurred in a patient in whom the administration of the hypnotic had been delayed until just before the application of the cocaine, allowing no time for its absorption. The drug when given by mouth must be given sufficient time to be absorbed before cocaine is used. In this period, then, from April 1, 1926, to April 1, 1927, only one case of true cocaine intoxication occurred and that developed because of the faulty administration of the drug. When this incidence is compared to the 19 per cent that were observed the year before, one may readily understand our faith in

6. Guttman, M. R.: Arch. Otolaryng. **4**: 304 (Oct.) 1926.
7. Leshure, John: Barbital as a Preventive of Cocaine Toxicosis, J. A. M. A. **88**: 168 (Jan. 15) 1927.

the drug. Since the time that we began using phenobarbital as a prophylactic, we have not had any occasion to use the drug in the management of an intoxication. It has been reported to us [8] that the hypnotic had been successfully used in a case of serious collapse following the injection of 10 per cent cocaine solution by mistake under the impression that it was procaine hydrochloride. The patient rallied after a hypodermic injection of 3 grains (0.2 Gm.) of phenobarbital. Roth [9] and Lewy [10] have been so pleased with the drug that they have also discontinued the use of morphine as a preoperative measure. They also noted a complete absence of reactions following the use of the drug. Roth had an opportunity of using the drug in a case of thyrotoxicosis in which there had been a marked reaction to cocaine at a previous operation under local anesthesia. At a subsequent operation, no untoward symptoms were manifested, as Roth had given the patient the phenobarbital before using the cocaine.

In view of these observations, the conclusion has been reached that phenobarbital is the best remedial agent in the treatment of cocaine poisoning in the therapeutic armamentarium, and that its use has an exact pharmacodynamic basis. Furthermore, its use in a prophylactic capacity is rational and has apparently been proved clinically to be effective.

DOSAGE

In regard to the dosage and manner of administration of phenobarbital, the following is suggested:

As a prophylactic, 3 grains (0.2 Gm.) should be given thirty minutes before operation so as to assure plenty of time for absorption.

In cases of mild intoxications, 3 grains (0.2 Gm.) of soluble barbital dissolved in sterile saline solution may be given hypodermically, or better, 5 cc. per kilogram of a saturated solution of paraldehyde in saline solution containing 100 mg. of soluble barbital. The latter is best made in a stock solution and kept sterile for emergency use.

In severe intoxications, 5 cc. of the paraldehyde soluble barbital mixture may be given intravenously.

As a preoperative sedative, 3 grains (0.2 Gm.) should be given by mouth thirty minutes before operation.

CONCLUSIONS

1. Phenobarbital is a very valuable drug in the treatment of acute cocaine intoxications.

2. Its use is rational and is based on an exact pharmacodynamic study.

3. Clinically, it has apparently proved its worth as a preoperative sedative, as a prophylactic in the prevention of cocaine intoxications in those exhibiting an idiosyncrasy to the drug, and also in the treatment of acute cocaine intoxications.

4. In a comparison of a series of cases in which phenobarbital was used before operation and a series in which it had not been used, it was apparently shown that its employment could prevent the occurrence of cocaine intoxication, and that it was a good preoperative sedative.

5. A stable solution of soluble barbital in physiologic sodium chloride solution saturated with paraldehyde should be available whenever one is confronted by a case of severe cocaine intoxication.

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8. Guttman, J. R.: Personal communication to the author.
9. Roth: Personal communication to the author.
10. Lewy: Personal communication to the author.

HYPERPROTEINEMIA ASSOCIATED WITH MULTIPLE MYELOMAS

REPORT OF AN UNUSUAL CASE *

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The literature contains very few references to hyperproteinemia. In an extensive series of studies on the concentration of plasma proteins in disease, the highest figure found by Rowe [1] was 10.4 per cent in an undiagnosed case of enlarged inguinal glands. Incidentally, the only case of myeloma (of the spinal cord) studied by Rowe showed a normal concentration of plasma proteins, 6.8 per cent, and a normal albumin : globulin ratio of 70 : 30. Higher protein figures are reported by Loeper, Forestier and Tonnet [2] in cancer, especially in cases of large tumors of the kidneys; in one such case 11 per cent of serum proteins were found. In Wu's [3] study of the plasma proteins in kala-azar, the highest figure reported is 10.5 per cent, with an albumin : globulin ratio of 32 : 68. In this case, as in the other cases of kala-azar, the globulin is greatly increased and reaches a concentration of 7 per cent. Other reported instances of hyperproteinemia deal entirely with animal experiments. Thus, Reymann [4] found an increase of total proteins, fibrinogen and pseudoglobulin in the course of diphtheria immunization in horses, stating that similar changes occurred on repeated injections of culture broth alone. Berger [5] found progressive increases in the fibrinogen, globulin and albumin concentrations of the plasma of rabbits subjected to repeated injections of foreign proteins. In a hitherto unpublished large series of analyses of plasma proteins in a great variety of pathologic conditions encountered in this hospital during the past three years, figures for total plasma proteins exceeding 7.5 per cent were extremely rare, and the highest figure found previously has been in a case of malignant tumor of the kidney, amounting to 9.4 per cent, of which 7.7 per cent was globulin (albumin : globulin ratio of 18 : 82).

The concentration of the plasma proteins in cases of multiple myelomas has not received any especial attention in the past. Rowe's series [1] contains the figures for one case of myelomas of the spinal cord which, as was stated, are quite normal. Jacobson,[6] who has recently described an interesting case of multiple myelomas with chronic nephritis, was able to demonstrate a great retention of a protein in the plasma analogous in its properties to those of the Bence-Jones protein found in the urine of this patient. Employing a method for the quantitative estimation of this protein which could yield only approximate figures, Jacobson reports that he found 7.8 per cent of this protein in the serum by coagulation at 56 C., washing and drying. The amount of the total protein was not determined, but

* From the Chemical Division of the Medical Clinic of the Johns Hopkins Hospital and University.

1. Rowe, A. H.: The Albumin and Globulin Content of Human Blood Serum, Arch. Int. Med. **18**: 455 (Oct.) 1916; Refractrometric Studies of Serum Proteins in Nephritis, Cardiac Decompensation, Diabetes, Anemia and Other Chronic Diseases, ibid. **19**: 354 (March) 1917.
2. Loeper, F.; Forestier, J., and Tonnet, J.: Presse méd. **29**: 333 (April 27) 1921.
3. Wu, Hsien: J. Biol. Chem. **51**: 33 (March) 1922. Sia, R. H. P., and Wu, Hsien: China M. J. **35**: 527 (Nov.) 1921.
4. Reymann, G. C.: Ztschr. Immunitätsforsch. u. exper. Therap. **39**: 15, 1924; Compt. rend. Soc. de biol. **89**: 614, 1923.
5. Berger, W.: Ztschr. f. d. ges. exper. Med. **28**: 1, 1922.
6. Jacobson, V. C.: J. Urol. **1**: 167 (April) 1917.

it must undoubtedly have been greatly in excess of the normal concentration.

REPORT OF CASE

J. W. E., a white man, aged 40, a farmer from North Carolina, admitted to the medical service of the Johns Hopkins Hospital, Oct. 21, 1926, complaining of "kidney trouble," gave an unessential family history and a past history of the usual childhood diseases without scarlet fever or diphtheria. With the exception of a possible history of typhoid at 8 and of summer diarrhea at 14 and 15, he had always enjoyed good health up to the onset of the present illness.

Ten years before admission, the patient strained his back while lifting a heavy weight, and five years later there was an acute spontaneous back pain, the full effects of which had never entirely subsided. Two years before admission he was operated on for hemorrhoids, and three weeks later was seized with an attack of apparently acute nephritis with hematuria, headache, fever and a "pounding pulse." The subsidence of the attack left him with the chronic symptoms of headache, some edema, a pounding pulse and nocturia. In the winter of 1925, without apparent cause, the patient fractured a rib. This was followed by dull aching pains between the shoulders radiating down the back. The pains increased in severity, confining the patient to bed. Skeletal changes then appeared, deforming the back, the pelvis and the upper part of the legs and knees. The patient had noticed a decrease of 3 or 4 inches in his stature, and a loss of 20 pounds (9 Kg.). There was no change in the size of the head. There had been increasing wheezing and cough in the past two years.

The patient appeared pale and emaciated, with evident weakness and labored respirations. He stood with his feet wide apart, showing dorsal kyphosis, absent lumbar kyphosis, sagged knees, and winged scapulae held backward to balance the sagging abdomen. The arms and legs were of normal length, and there was no widening of the pelvis.

The chest was filled with coarse râles, and the breath sounds were wheezing. The blood pressure was 175 systolic and 100 diastolic; the pulse was 90, and there was a systolic murmur, audible at the apex of the heart. The liver and spleen were palpable. There was a general enlargement of the lymph nodes. The blood picture was that of a secondary anemia, with hemoglobin, 40 per cent (Sahli); red blood corpuscles, 1,800,000, and white blood corpuscles, 12,000. The urine showed albumin + + + +, red blood cells, white blood cells and casts. Bence-Jones protein was repeatedly demonstrated, and a culture taken from the urine showed a heavy growth of *Staphylococcus albus* and beta hemolytic streptococci. The roentgen-ray studies showed multiple involvement of the skull, ribs, spine, clavicles, pelvis, upper extremities and femurs, with rarefaction and numerous punched out areas. A piece of tissue, removed at biopsy from the greater trochanter of the femur, was diagnosed multiple myeloma of the plasma cell type.

During his stay in the hospital, the patient's temperature ranged from 99 to 100.4 F., and the pulse from 109 to 130. The respiratory difficulty disappeared under treatment with potassium iodide. The blood pressure fell from 170/102 to 125/90; the white blood count, from 12,000 ot 8,000. The albumin and blood in the urine decreased but did not disappear.

The patient was discharged, November 17, after biopsy had determined the fundamental condition, symptomatically improved, but with the underlying disease process unaltered.

COMMENT

The presence of Bence-Jones protein in the urine of this patient was not easily established because of the difficulty of separating it from a large amount of the usual serum proteins, chiefly albumin, always present. The only method of separation which could be used was filtering the acidified boiling urine. In using this procedure, it is more than probable that a considerable amount of the Bence-Jones protein remains occluded by the bulk of the coagulated serum protein of the urine, and does not redissolve on boiling. Judging, however, from the very faint cloudiness which appeared in the acidified urine on heating it from 40 to 60 C., the concentration of the protein in the urine was never great during the period of this study.

Because of the obvious skeletal changes in the patient, a sample of blood was secured for a serum calcium determination before the final diagnosis of his condition was made. It was then found that it was practically impossible to obtain any serum from the clotted blood, for the clot failed to retract, even on prolonged and repeated centrifugalization. Serum had to be obtained by expressing it from the clot. This observation led to the surmise that an excessive amount of fibrinogen was present in the blood, and to the analyses of fibrinogen and of the other plasma proteins in a sample of oxalated blood. The first analysis presented such abnormally high figures that it was repeated twice subsequently with substantially the same results, as will be seen from the accompanying table.

The analytic technic used was as follows: The total nitrogen was determined by the usual Kjeldhal method on 1 cc. samples; the total protein nitrogen was obtained by subtracting the nonprotein nitrogen determined by the micromethod of Folin and Wu from the total nitrogen, and the total protein, by multiplying by the factor

Plasma Proteins in Oxalated Blood *

	Oct. 30, 1926	Nov. 11, 1926	Nov. 16, 1926	
Total solids	16.15	16.92	17.10	
Refractive index	1.3610	1.3629	1.3585	
Total protein	12.32	13.40	13.84	
Albumin	1.42	1.67	4.06	
Globulin	10.11	11.04	9.09	Euglobulin 6.79 Pseudoglobulin I 0.63 Pseudoglobulin II 1.49
Fibrinogen	0.79	0.69	0.69	
Albumin globulin ratio	12 to 88	14 to 86	29 to 71	
Sodium chloride	0.610	0.643	0.668	
Total fatty acids	0.155			
Cholesterol	0.130			
Calcium	10.8 mg.			
Inorganic phosphorus	4.8 mg.			
Osmotic pressure of proteins			45	cm. of water
Surface tension of serum			62	dynes per centimeter
Surface tension after two hours			52.5	dynes per centimeter

* Figures are in grams per hundred cubic centimeters of plasma.

6.25. The fibrinogen and the total globulins were determined by Howe's [7] method of salting out the globulins with a second-molar solution of phosphates and using a macro-Kjeldhal determination of the nitrogen in the filtrates. In the case of the fibrinogen, both the nitrogen of the clot obtained on the addition of calcium chloride and of the filtrate were determined in order to get further checks. In the calculation of the albumin: globulin ratio figures as given in the table, the fibrinogen was included with the globulins, as is customary for plasma proteins.

The striking feature of the data presented in the table is, of course, the very great increase in the plasma proteins, from 12.3 to 13.9 per cent, which is twice as great as the normal concentration of the plasma proteins. It is noteworthy that the globulins constitute from 71 to 89 per cent of the total protein, varying from 9.1 to 11 Gm. per hundred cubic centimeters of plasma. The concentration of the globulins was so great that on the addition of a few drops of plasma to 5 cc. of distilled water flocculation occurred within a short time, exactly in the same manner as described by Wu [3] for kala-azar plasmas. This precipitation of a water insoluble globulin suggested the presence of large amounts of euglobulin. This suggestion was verified analytically by the determination of the three globulin fractions in the plasma obtained on Novem-

7. Howe, P. E.: J. Biol. Chem. 57: 235 (Aug.) 1923.

ber 16, in which 7 Gm. of euglobulin per hundred cubic centimeters was found. It is very likely that in kala-azar similarly large amounts of euglobulin could be demonstrated by such fractionation. Here, also, as in Wu's series of kala-azar cases, along with the increase in the plasma globulins, the concentration of the albumins was greatly decreased, at least in the first two samples of blood, to 1.4 and 1.7 Gm. per hundred cubic centimeters, respectively. The rise of the albumin fraction in the third blood sample, of November 16, to 4.06 Gm. is a noteworthy but unexplained observation. Reymann [4] and Berger [5] also observed that following increases of the globulin fractions a rise in the albumin fraction occurred in the hyperproteinemias studied by them. The fibrinogen in this case was found to be greatly elevated, from 0.69 to 0.79 per cent, as had been surmised at the outset from the failure of the clotted blood to retract on standing and centrifugalization. Repeated attempts were made to isolate Bence-Jones protein by heating the diluted plasma at 55 or 60 C., following Jacobson's technic.[6] While an abundant precipitate was frequently obtained, it failed to redissolve on further heating to boiling. When, however, this precipitate was dissolved in a dilute solution of sodium hydroxide, and precipitated by the addition of concentrated nitric acid, a small portion of it went into solution on boiling and a definite turbidity reappeared on cooling. Normal plasmas used in control experiments failed to respond to this test. This leads us to believe that there was present in the plasma as well as in the urine a small amount of Bence-Jones protein. Jacobson reported finding as much as 8 per cent of Bence-Jones protein in the serum of his patient, already referred to, by means of drying and weighing the precipitate obtained from undiluted serum heated at 56 C. There are good reasons for believing that the relatively unstable euglobulin when present in large concentration will be easily coagulated by heating even at as low a temperature as 56 C. Hence it is possible that at least a considerable portion of the protein fraction isolated by Jacobson consisted of euglobulin, carrying a significant amount of Bence-Jones protein with it.

Several other constituents and physicochemical factors were determined. The serum calcium, in spite of definite evidence of bone disease, was found to be normal, 10.8 mg. per hundred cubic centimeters. The total neutral fat was found to be at a low normal level of 0.155 per cent, as was the total cholesterol of 0.130 per cent. The surface tension measured for us by Dr. Elizabeth Nicholls of this laboratory by means of the Du Nouy tensiometer showed an initial figure of 62.5 dynes per centimeter, falling to 52.5 dynes after standing two hours. The initial value is considerably above the normal range, but the final value is within the normal range. It is particularly interesting to note that the osmotic (oncotic) pressure of a sample of plasma determined by means of a collodion thimble osmometer equilibrated against Ringer solution [8] showed a practically normal pressure of 45 cm. of water as due to the proteins. This can be easily explained on the basis of Sørensen's (unpublished) data giving a much lower osmotic pressure to the globulins than to the albumins. On the basis of Govaerts' [9] empirically determined figures, the osmotic pressure of this particular sample of plasma consisting of 1.7 per cent of albumin and 11.7 per cent of globulin was calculated to amount to even less than the observed value; namely, 37 cm. of water.

The only explanation of this unusual accumulation of protein in the plasma which occurs to us and which we may venture to suggest is the following one:

The consensus of investigators who studied the nature of the Bence-Jones protein [10] is to the effect that this substance is chemically and immunologically quite distinct from the serum and the tissue proteins. It is possible, therefore, to conceive of it as a foreign protein in relation to the rest of the body. That the parenteral introduction of foreign protein in animals, as in immunization experiments also in the production of diphtheria antitoxin in horses, produces alterations in the blood proteins is well known.[11] These changes usually consist of increases in the fibrinogen and globulin fractions, a decrease in the albumin, and an increase in the total proteins. The hyperproteinemias which have been found associated with kala-azar,[3] malignant tumors [2] and in the case described may be interpreted as a systemic response to a protracted intoxication with a foreign protein.

SUMMARY

In an unusual case of hyperproteinemia associated with multiple myelomas the great increase of the plasma protein was found to be almost entirely in the euglobulin and partly fibrinogen fractions. It is possible that this phenomenon may be explained on the basis of a systemic reaction to a foreign protein.

8. We are indebted for this measurement to Dr. A. Grollman of the department of physiology.

9. Govaerts, P.: Bull. de l'Acad. méd. de Belgique, 1924, number 3; Compt. rend. Soc. de biol. **93**: 441 (July 17) 1925.

10. Massini, H.: Deutsches Arch. f. klin. Med. **104**: 109, 1911. Hektoen, Ludvig: Specific Precipitin for Bence-Jones Reaction, J. A. M. A. **76**: 929 (April 2) 1921. Bayne-Jones, S., and Wilson, D. W.: Bull. Johns Hopkins Hosp. **33**: 37 (Feb.) 1922; **33**: 119 (April) 1922.

11. Reymann (footnote 4). Berger (footnote 5). Gibson, R. B., and Banzhaf, E. J.: J. Exper. Med. **12**: 411, 1910.

A CASE OF LEAD POISONING RESULTING FROM THE USE OF SNUFF

LEAD STUDIES; XVI *

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Chronic lead poisoning is a relatively common disease. Usually the source of lead can be traced to one of the many industrial lead hazards or to water, alcoholic beverages, or the accidental ingestion of lead. About a year ago in THE JOURNAL [1] there appeared the question, How does snuff become impregnated with lead? About this time a patient was admitted to the surgical ward of the Massachusetts General Hospital with a tentative diagnosis of intestinal obstruction, which further study demonstrated to be due to lead colic. The history of the case was as follows:

REPORT OF CASE

A. S., a widower, aged 59, a Swedish seaman, complained chiefly of vomiting and constipation. He had enjoyed good health until one year before his entrance to the hospital. At this time he suffered from vomiting, constipation, and severe cramplike pain confined to the lower half of the abdomen. There were no other associated symptoms. This attack lasted three days; complete relief was obtained from thorough purgation. He had had five similar attacks during the year, each time suffering from the same symptoms, and he always

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1. Composition of and Lead Poisoning from Snuff, Queries and Minor Notes, J. A. M. A. **87**: 1762 (Nov. 20) 1926.

obtained complete relief by catharsis. Two weeks prior to entry he was again troubled with vomiting, obstinate constipation, and severe lower abdominal cramplike pain. He again did not complain of any associated symptoms. He had not received any relief from catharsis. Except for pneumonia twenty-one years before, he had always been in excellent health. He stated that he had never had any venereal disease. When questioned in regard to his habits he said that he had consumed from 1 to 2 ounces of moist snuff tobacco daily for at least twenty-five years. He usually snuffed the tobacco into his nose but he also admitted chewing it from time to time.

The patient was well developed, well nourished and slightly anemic. His teeth were tobacco stained. His gums disclosed marked pyorrhea and a heavy lead line most marked on the lingual side. The heart and lungs were normal. The blood pressure was 160 systolic and 80 diastolic. He showed moderate arteriosclerosis. The abdomen was soft but slightly tender in both lower quadrants. The reflexes were normal and equal.

Laboratory analyses showed: red blood cells, 3,400,000; hemoglobin, 60 per cent; white count, 9,000, and reticulated cells, 1 per cent. The differential count was normal except for one basophilic stippled cell in every two to three oil immersion fields. Serum dilution of the blood was 1 to 5. Wassermann tests on both the blood and the spinal fluid were negative. Gastric analysis before the test meal showed no free hydrochloric acid and a total acidity of 13.5; one hour after the test meal, no free hydrochloric acid and a total acidity of 30. Five stool examinations were negative macroscopically and chemically for blood. Both the stool and the urine contained large amounts of lead. The following roentgen-ray examinations were reported negative: barium enema, gastro-intestinal series, Graham test, and flat kidney plates.

Under large doses of atropine, and brisk catharsis with magnesium sulphate, the patient became symptom free at the end of sixty hours. He was discharged from the hospital on a high calcium diet feeling well. Close questioning did not elicit any possibility of lead exposure in his occupation. He was fairly certain he had never used water from lead pipe. This led us to suspect the snuff as the possible cause of the plumbism. The two brands of moist snuff tobacco that he was accustomed to using were then examined for lead. One sample was found to contain 0.9 mg. per ounce and the other 0.8 mg. per ounce. He also informed us that years previously he had used snuff which was wrapped in heavy tin foil.

COMMENT

Moist snuff is made from tobacco leaves and stalks which are placed in a wooden bin and to which water and salt are added. This mixture is allowed to ferment for a period of several weeks, and the leaves and stalks are then ground in a fine mill. Snuff can be perfumed with certain oils, such as cinnamon oil or oil of cloves. This process does not introduce any lead into the snuff unless the tobacco leaves have been sprayed with a germicide containing one of the lead compounds.

Red mercuric oxide and lead chromate were formerly used to adulterate snuff, thereby improving its color and sale value. Model's paper [2] in 1784 was the earliest reference found to lead poisoning resulting from the continued use of snuff containing lead. In 1849, Hassal [3] examined forty-three kinds of snuff, and found that nine brands contained lead chromate in amounts varying from 1 to 4.5 per cent. Three samples contained the oxide of lead, as much as 3 per cent in one case. In 1856, Meyers [4] reported five cases which, he felt certain, had resulted from the continued use of adulterated snuff. Previously, snuff was often kept in vessels or wrappers of lead, or in the alloy of lead called "patent tin foil." Sonnenkalb [5] considered that snuff frequently acquired an accidental impregnation of lead by reason of the coverings of lead in which it was packed. In 1859 he reported nineteen cases which he believed were due to snuff, the lead content in all probability coming from the lead wrapper. In an ordinance of May, 1857, the Prussian police force warned the public of the possible danger of using snuff wrapped in lead wrappers. They also stated that several cases of lead poisoning had resulted from the use of such snuff. The wrappers in such cases often showed rather extensive erosion. Up to 1883 there were a total of twenty-three references to the subject of plumbism with snuff as the most probable source of lead. Most of these reports are found in the German literature. Mayer,[6] Chambers,[7] Reese,[8] Creegan,[9] Weaver [10] and Garrod [11] all reported one case each resulting from the use either of adulterated snuff or of snuff accidentally impregnated from the lead in the wrappers. Stadler [12] reports a case of fatal lead poisoning resulting from lead-impregnated snuff, the lead being derived from the metal wrapper. The metal wrapper in this case contained 87 per cent lead, and the snuff, 1.7 per cent lead. Except for the note already mentioned,[1] the last reference in English was in 1890. At this time Ormsby [13] reported a case of aphonia due to lead poisoning, the source of lead being snuff. In all, thirty references were found in which snuff was mentioned as the causative agent in cases of lead poisoning. The snuff examined in our case came in paraffin-coated cardboard boxes with tin covers. The tin covers contained large amounts of lead, and this would seem to be a logical source for the lead found in the snuff. Thus it would seem that we were dealing with another case of accidental contamination of snuff by lead. If the present tin covers were replaced by paraffinized pasteboard covers, this part of the lead hazard could be eliminated, though it has not been proved that this is the only source of lead.

In this particular case the portal of entry could be either gastro-intestinal or upper respiratory, depending on whether the snuff was chewed or snuffed. That particulate matter can be absorbed from the nasopharynx has been well demonstrated by Blumgart.[14] Using dogs prepared by means of a tracheal cannula and ligation of the esophagus so that lead could not enter either the lungs or the gastro-intestinal tract, he introduced solid lead carbonate into the nasopharynx. After a lapse of from one to three days the animals were killed, and all tissues exclusive of the head and skin were found to contain considerable amounts of lead. Analyses of the trachea, lungs and esophagus in these animals were negative for lead, showing that the only mode of entrance was through the nasopharynx. Thus, lead need only reach the nasal passages in order to gain entrance into the body. Naturally, these animals were exposed to large amounts of lead over a

2. Model, H.: Warnung den toback nicht in bley aufzuheben, Arch. de méd. Pol. Leipzig **2**: 250, 1784.
3. Hassal, A. H.: Food and Its Adulteration, London, 1849, p. 509.
4. Meyers, M.: Ueber partielle Lähmungen der Extremitäten durch fortgesetzen Gebrauch von bleibaltigen Schnupftabak, Arch. f. path. Anat. **9**: 209, 1856.
5. Sonnenkalb, E.: Ueber Bleigehalt der Schnupftabak mit besonderer Beziehung zu Leipzig, Deutsche Ztschr. f. d. Staatsarznk., new series **13**: 191, 1859.
6. Mayer: Cause insolite de l'intoxication saturnine, Ann. Soc. de méd. d'Anvers **38**: 475, 1877.
7. Chambers: Saturnine Disease in a Gas Engineer from Contact with Red and White Lead, Lancet **1**: 60, 1860.
8. Reese, Owen: Saturnine Disease from the Use of Snuff Adulterated with Lead: Palsy of the Upper Extremities, Lancet **1**: 61, 1860.
9. Creegan, J. J.: Letter on a Case of Lead Poisoning Caused by the Use of Snuff, M. Times & Gaz. **2**: 443, 1861.
10. Weaver: Lead Poisoning by Snuff, Brit. M. J. **52**: 552, 1890.
11. Garrod: Cases Under the Care of Dr. Garrod, Lancet **1**: 781, 1870.
12. Stadler, E.: Ein Fall von tötlicher Bleivergiftung durch Schnupftabak, Cor.-Bl. f. schweiz. Aertze **42**: 145, 1912.
13. Ormsby, R.: Aphonia Caused by Lead Poisoning Contracted by the Abuse of Snuff, New York M. J. **52**: 552, 1890.
14. Blumgart, H. L.: Lead Studies: VI. Absorption of Lead by the Upper Respiratory Passages, J. Indust. Hyg. **5**: 153 (Sept.) 1923.

short period of time but, as he pointed out, the absorption was probably hindered by the loss of lead through drooling and by the fact that the nasal mucus was not concentrated by evaporation as in normal breathing. In our patient the portal of entry was probably gastrointestinal as well as by way of the nasopharynx because he occasionally chewed snuff as well as snuffed it.

SPONTANEOUS HEALING IN A VESICO-UTERINE FISTULA FOLLOWING LABOR

REPORT OF CASE *

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The patient here discussed was first seen by me after she had been in labor for sixty hours, with the bag of waters ruptured at the onset of the pains. In the interim an ampule of pituitary extract had been administered and had given rise to intense pain. During this time numerous vaginal examinations had been made without attention to asepsis.

The patient was sent to the hospital, where vaginal examination revealed a long, soft, cuff-like cervix with an os of 5 cm. The head was not engaged, and the sagittal suture was in the transverse diameter. A number 3 Voorhees bag, which was inserted and ballooned, was expelled after fifty minutes and the cervix was almost completely dilated but not wholly effaced. On account of the rapidity of fetal heart tones, the atonicity of the uterine musculature and the weakened condition of the mother, labor was terminated at once.

In view of the fact that the patient had a moderately contracted pelvis and that the bag of water had been ruptured for seventy-five hours, and also because of the existing temperature and the history of repeated vaginal examinations without asepsis, delivery by forceps was chosen rather than by section or version.

Under ether anesthesia a deep, left, mediolateral episiotomy was done, and cervical incisions were made at points corresponding to 10, 2 and 6 on the clock. Kielland forceps were applied and gentle traction was made, but the head could not be drawn into the pelvis. The operator then resorted to version, delivering an 8 pound 14 ounce (4 Kg.) baby in the next few minutes. The placenta was delivered manually in toto, and the incisions repaired.

On the morning of the fifth day the puerpera complained of inability to hold the urine, which was cloudy and contained masses of pus cells per microscopic field. After catheterization and irrigation of the bladder, water was observed to come from the vaginal vault. On instillation of a solution of methylene blue into the viscus, a small stream of the solution was seen to come from the cervical os. Cystoscopic examination revealed an area of trauma in the region of the left ureteral orifice, near the median line of the bladder. A roentgenogram was made but it did not throw further light on the condition.

Following catheterization and irrigation of the bladder each morning for five consecutive days, a silver iodide preparation was instilled. On the fourteenth day post partum, the patient was discharged from the hospital with urine still trickling from the vaginal vault at intervals, though markedly diminished in quantity and less frequently than when attention was first called to the condition.

Ten days following discharge, examination did not show any leakage from the bladder, and a second examination two weeks later revealed a perfectly healed condition without any discomfort experienced on the part of the patient.

Careful search of the medical and surgical bibliographies shows that vesico-uterine fistulas are relatively rare. Jonquan [1] remarks that reports of such cases are very rare. He believes that many cases of enuresis paralytica are due to such fistulas and that they disappear as the lesions go on to spontaneous healing. In his own case, nine days after a forceps delivery, urine was observed to come from the vaginal vault, and examination revealed a perforation about 6 or 8 cm. up in the cervical canal which seemed to have cut through the anterior portion of the cervix and to lead into the bladder. But the opening into the latter was situated about 5 or 6 cm. higher than that in the cervix.

The peculiarity of this particular fistula, its oblique course from the posterior wall of the bladder to the cervix and the valvelike closure of the posterior bladder wall protecting the opening into the cervix led to the belief that a spontaneous healing might have been hoped for, since the uterus returned to its normal, puerperal state. For two weeks urine continued to flow involuntarily, in drops, from the vagina, but toward the end of the fourth week the patient retained the urine; micturition became voluntary, and reexamination did not show any evidence of the presence of the fistula.

Verstraeten [2] reports the case of a sextipara who, fifteen days after delivery, complained of inability to hold the urine. The labor had been a difficult one and of two days' duration. On examination, urine was observed to come from the cervical os. Cystoscopic examinations from time to time during the next three weeks did not reveal any change within the bladder, but less urine came from the cervical os. At the end of another week, incontinence had entirely disappeared, the vagina was dry and the uterus completely involuted.

Brodhead [3] reports the case of a sextipara, aged 37, who, following a forty-five hour labor, reported that on the fourth day post partum she "felt like a balloon" and complained of a hard swelling in the lower part of the abdomen. Examination revealed blood-stained urine escaping from the cervix uteri with a large opening leading from the region of the internal os to the bladder. The fistula was open for about three days, after which it closed and remained so. The author suggests that the fistula may have been caused by a small rupture of the uterus resulting from the pituitary extract.

Von Thompson,[4] Zweifel,[5] Dombier,[6] Gaume,[7] and Lavenant and Nagel [8] report cases of vesico-uterine fistulas, but none in which spontaneous healing resulted. Under operative procedure, however, the lesion responded readily to rapid closure.

SUMMARY

Each of the ten cases reported here followed labor. In three, forceps were applied; in two others an ampule of pituitary had been administered before delivery. The remaining six patients gave a history of prolonged labor in which the uterine contractions were unusually strong. Four of these had moderately contracted pelves. In each of the ten cases the fetal membranes had been ruptured several hours previous to the delivery.

CONCLUSIONS

1. Vesico-uterine fistulas may be the sequelae to traumatism in labor by forceps manipulation, either by

* Read before the Jasper County Medical Society, Joplin, Mo., April 19, 1927.

1. Jonquan: Vesicouterine fistule, Paris chirurgical, 1909.
2. Verstraeten, C.: Observation de fistule vesicouterine guérie spontanement, Ann. Soc. de méd. de Gand. **54**: 106, 1876.
3. Brodhead, G. L.: Spontaneous Closure of a Large Uterovesical Fistula, M. Rec. **98**: 437 (Sept. 11) 1920.
4. von Thompson, H.: Zentralbl. f. Gynäk. **48**: 2566-2568 (Nov. 22) 1924.
5. Zweifel, P.: Monatschr. f. Geburtsh. Gynäk. **53**: 3 (Oct. 9) 1920.
6. Dombier, M.: Thesis, Paris chirurg. **40**: 80, 1922.
7. Gaume: Thesis, Paris chirurg. **13**: 272, 1921.
8. Lavenant and Nagel: Vesicouterine fistule, Paris chirurg. **75**: 1133-1290, 1916.

carelessness or through incompetence, especially in an attempt at rotation.

2. The condition may be brought about through a lack of skill in doing a version.

3. These fistulas may follow an uninterrupted, prolonged labor in which there have been unusually strong uterine contractions, thereby keeping the fetal head imposed on the rami pubis with the bladder interposed between the head and the pubic bones.

4. This type of lesion in the majority of cases reported has not, according to the history, been the result of traumatism on the part of the accoucheur, though he may have been reluctant to report this feature of his work.

5. Practically all these fistulas have occurred in cases in which there was a prolonged labor, a moderately contracted pelvis, or a combination of the two, with the bag of waters rupturing several hours previous to the delivery.

6. The lesion may be brought about following the administration of pituitary extract.

7. Great care should be exercised in all labors in which it is necessary to intervene, especially in those in which the membranes have been ruptured for several hours.

8. Vesico-uterine fistulas probably occur more frequently than is observed or reported, as a result, in many instances, of a small opening so situated as to make it a valvular type of lesion, thereby enhancing its opportunity for rapid union.

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THE TREATMENT OF GENERAL PARALYSIS BY INOCULATION WITH MALARIA

III. FOURTH-YEAR RESULTS *

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Our second report [1] on the treatment of general paralysis by inoculation with malaria dealt with 106 male patients who had completed treatment prior to Dec. 15, 1925. Of these, twenty-two had died,[1] so that on March 15, 1926, the date of preparing the foregoing report, there were eighty-three patients still living,[2] whose period of observation subsequent to treatment then ranged from three months to two years and nine months in duration. Since Dec. 15, 1925, fifty-nine additional patients have undergone the malaria treatment; but as the clinical results obtained in the latter have been essentially similar to those previously reported, the present communication will be concerned solely with the subsequent clinical course of the eighty-three patients who were alive on March 15, 1926. For it appears to us that observations on the ultimate fate of general paralytics subjected to the malaria treatment are of greater interest than the accumulation of additional data on the more immediate therapeutic results obtainable, especially since there now exists with regard to the latter a rather striking consensus of experience.

These eighty-three patients, then, treated prior to Dec. 15, 1925, and alive on March 15, 1926, have now—June 15, 1927—been observed over a period of time ranging from one year and a half to exactly four years. In sixty-two of these cases this posttreatment period of observation has been more than two years, and in twenty-five of them three years or longer.

DEATHS

Of the eighty-three patients alive on March 15, 1926, four have since died. Their deaths took place seven months, one year and ten months, two years and six months, and three years and one month, respectively, subsequent to the completion of treatment. The first of these must therefore be added to the nine previously reported,[1] who died within two to eleven months of completing their course of malaria. Hence, of ninety-three patients [3] who survived treatment by more than a few weeks, ten died of general paralysis within the first year.

The average expectancy of life exhibited by general paralytic males admitted to the New York State hospitals is 1.5 years.[4] Thus, only the ten patients just mentioned (11 per cent of the ninety-three in question) have failed to achieve this average expectancy, whereas this period was somewhat exceeded (by from four months to one year and seven months) by three of the four patients who have died since March 15, 1926, and also has been exceeded, of course (by from a few weeks to two years and six months), by the seventy-nine patients still living—or, in sum, by 88 per cent of the ninety-three patients who survived the acute period of treatment.[5]

Including the thirteen patients who died as the more or less direct result of the malaria itself, 22 per cent of the patients in this series (twenty-three out of 105 [5])—but, exclusive of the latter, only 11 per cent (10 out of ninety-three)—died during the first year of hospitalization; whereas, according to Pollock,[6] 58 per cent of untreated patients (325 out of 559) die within this period.

UNIMPROVED CASES

From this point we shall confine the discussion of the patients [7] still living to the twenty-four who have now been under observation, since their treatment was completed, for a period of three years or longer. Six of these, originally classified as unimproved, continue in the same therapeutic category but are nevertheless still living after an interval of between three and four years subsequent to treatment; four of the six, indeed, were among the first cases treated by us, so that even in the most recent of the four the period of posttreatment observation now lacks but a few weeks of being of four years' duration. These four are further distinguished by the fact that their clinical status, in both a physical and a mental sense, differs in no demonstrable or observable way at the present time from that which they presented on admission; so far as it is possible to tell, their condition—and also that of a fifth patient, now under obser-

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1. Bunker, H. A., Jr., and Kirby, G. H.: The Treatment of General Paralysis by Inoculation with Malaria: A Second Report, Arch. Neurol. & Psychiat. **16**: 182 (Aug.) 1926.

2. One patient achieved a very definite remission of more than moderate degree but committed suicide eight months after treatment; he was previously reported not as a death but as a moderate remission (case 5 of our second report).

3. That is, 106 minus 13 who failed to survive their course of malaria (footnote 2).

4. Pollock, H. M.: Annual Statistical Review of the Patients Treated in the State Hospitals and Private Licensed Institutions for Mental Disease, Albany, 1925, p. 224. The average duration of life here given is based on 559 male patients with general paralysis who died during the year ended June 30, 1924.

5. That is, excluding the suicide referred to in footnote 2, who did not exceed the average life expectancy but might have done so.

6. Pollock: Statistical Review, p. 225.

7. One of this group of twenty-five three-year patients died at the end of three years and one month, as already explained.

vation for three years and two months—has remained absolutely stationary throughout. In the sixth patient there has been no very conspicuous mental deterioration during the period of exactly three years that has elapsed since treatment was completed; his physical state, however, has exhibited marked fluctuations, with a considerable decline on the whole.

Hence, of ten "unimproved" patients treated between three and four years ago, six are still living, and five of them have shown no physical or mental retrogression whatever up to the present time. Doubtful though the practical value of such an outcome may be, the fact seems to point to a definite influence on these patients on the part of the treatment; it would appear to strengthen the impression expressed in previous articles that the malaria treatment has actually arrested the disease process in these patients, even though at a stage when functional restitution was no longer possible.

PARTIAL REMISSIONS

Two patients, originally classified as moderate remissions and now under observation for three years and for three years and three months, respectively, have shown no very appreciable alteration in their general condition throughout the period. One of them, it is true, has failed, since our second report was written, to make a satisfactory adjustment outside the hospital, but has given no evidence whatever since his return to the ward of physical or mental retrogression, although it would now seem more appropriate to regard him as a slightly improved case only, in view of the very modest character of the mental improvement which he has, nevertheless, undoubtedly shown. The second patient, on the other hand, is now indistinguishable from an example of full remission; but the material improvement which has taken place in this patient since the partial relapse which he began to exhibit nearly a year and a half after his course of malaria [8] we are inclined to attribute to the sixty-five injections of tryparsamide which he has since received, beginning nineteen months subsequent to the termination of the malaria treatment.

FULL REMISSIONS

The sixteen patients in the present group of twenty-four who were originally classified as complete remissions continue, with two exceptions, fully to deserve that ranking, after an interval since treatment varying from three years and one month to four years. Hence there can be no doubt—as indeed is already evident from the reports of European clinics—that remissions in malaria-treated general paralytics may persist unaltered for at least three and a half to four years. It should be added that none of these sixteen patients have received supplementary antisyphilitic therapy, with the single exception of one whose persistent pleocytosis caused us to be fearful of the ultimate outcome in his case.[9]

RELAPSES

What is of especial interest, however, is the occurrence of the two exceptions to the foregoing—exceptions which have not so far been observed among the cases of complete remission followed for a period less than two years in duration, as though a certain considerable interval of time—longer, moreover, than that usually seen in the case of "spontaneous" remissions—were required before eventual relapse took place in what it is to be hoped will prove to be only a small minority of these patients. In one of the two instances referred to, the patient's mental retrogression—which, though perfectly definite, was of a nature and of a degree such as to be noticeable only to his wife, while he was able to continue at his occupation, that of typesetter, in a more or less satisfactory manner—had its inception exactly two years subsequent to his course of malaria. At the end of about six months the patient regained to a fairly complete degree his previous status, and this relatively satisfactory situation has now persisted for exactly one year. The other patient who relapsed did so three years and three months subsequent to his course of malaria; the retrogression which he exhibited was much more severe than in the previous case. He gradually relapsed into the same dulness, apathy and loss of all energy and initiative (together with forgetfulness) which had characterized, although to a considerably greater degree, his initial psychosis. He thus became wholly incapacitated for the occupation, that of caretaker and janitor of apartment houses, which he had carried on with entire efficiency since his discharge from the hospital early in 1924. At the same time he retained complete insight into his deteriorated state (as the other patient did not), and voluntarily applied for readmission to the hospital in March, 1927. It now seems very probable that at least a partial reestablishment of his earlier status will ensue in consequence of a second course of malaria, which he completed two months ago, on April 15, 1927.

In view of the unfavorable prognostic significance which seems often to attach to a persistent pleocytosis in the spinal fluid in malaria-treated general paralytics,[1] it is of some interest that the latter patient's cell count was still slightly elevated not only at the end of three months but after one and one-half and also two and one-half years, while at three and one-half years, on readmission to the hospital, his cell count had risen to 35 per cubic millimeter.

An additional point of interest in regard to the patient last described is the fact that he was one of the seven patients of the so-called simple dementing type of general paralysis in our series to attain a full remission; [10] among these seven—four others of whom, incidentally, belong in the same three-year group of twenty-five cases—he represented, moreover, one of the most satisfactory results. The other instance of partial relapse which we have cited was classified as a not very clear-cut example of the expansive type.

The matter of clincal type suggests mention at this point of the behavior, from the standpoint of relapse, which is occasionally observable in patients of the so-called manic type of general paralysis—a species of reaction worthy of further study, and of some practical importance in a prognosis which is otherwise relatively favorable in cases of this description.[10] Our experience in the treatment of general paralysis has enabled us to include to date three examples of an almost immediate shifting, subsequent to treatment, to the opposite phase of the quasi-manic-depressive reaction exhibited by these patients. In two instances an extremely active "manic" phase, which terminated approximately six weeks and three and a half months, respectively, subsequent to malaria treatment, was succeeded by an extended period of depression with retardation which had its onset six weeks and two months, respectively, subsequent to the termination of the hyperactive phase. In the first case, the depression lasted a little less than six months, and the patient's mental condition has now

8. Case 4 of our second report.
9. Case 8 of our second report.

10. Kirby, G. H., and Bunker, H. A., Jr.: Types of Therapeutic Response Observed in the Malaria Treatment of General Paralysis, Am. J. Psychiat. 6: 205 (Oct.) 1926.

been essentially normal for the past thirteen months; in the other patient, treated one year ago, the depression has now lasted seven months and is still definitely in evidence. In each instance, it will be noted, the depression appeared shortly after the patient's discharge from the hospital, at a time when for more than a month he had appeared to represent an excellent therapeutic result.

The third patient, since he was a tryparsamide and not a malaria treated case, is mentioned only for the sake of completeness, because his depression, which followed the manic phase at an interval of two months and persisted for a period of three months, was perhaps more typical of and less distinguishable from a true manic-depressive depression than that of any of the other three patients here cited; he has now been actively engaged in business, without recurrence of mental symptoms, for nearly three years.[11] In still another patient, on the other hand, a brief period of rather mild hypomania was after a short interval succeeded, prior to malaria treatment (though subsequent to a small amount of tryparsamide therapy), by a retarded depression; although the depression lightened temporarily after the course of fever, it deepened again after a few weeks, and has now been present, in addition to obvious mental deterioration, throughout a posttreatment period of twenty months.[12]

SUMMARY

1. Of ninety-two male patients with general paralysis who received malaria treatment prior to Dec. 15, 1925, and who survived their course of fever therapy, ten died within two to eleven months of its completion. Thus, 11 per cent died within a year of admission to the hospital, as compared with about 58 per cent of untreated general paralytics who do so.

2. Of the eighty-three remaining patients, whose posttreatment period of observation now (June 15, 1927) ranges from one and one-half to four years, three died during the second, third and fourth years, respectively. Thus, 88 per cent of the total ninety-three patients have exceeded the period of one and one-half years which is the average expectancy of life, at the time of admission, of general paralytic males in the New York state hospitals.

3. Of the twenty-five patients whose posttreatment period of observation now exceeds three years, one has since died (as noted); five, though wholly unimproved, have preserved an absolutely stationary mental and physical status, and a sixth has deteriorated physically rather more conspicuously than mentally; one slightly improved patient has shown no evidence of retrogression, and one much improved patient has registered a considerable further improvement (probably ascribable, however, to subsequent tryparsamide therapy); of sixteen patients originally classified as full remissions, fourteen have maintained this status to the full. In only one of the latter group of fourteen has supplementary antisyphilitic therapy been used.

4. Two patients who originally exhibited complete remissions suffered a moderate relapse, with partial return of symptoms, two years and three years and three months, respectively, subsequent to treatment. A good degree of restoration took place after six months in the first; in the second the outcome is not as yet fully determined.

5. In three patients of the so-called manic type of general paralysis (out of a total of nineteen of this type), the hyperactive phase, after subsiding subsequent to treatment, was succeeded at an interval of about two months by a rather protracted depression with retardation—a point of some importance in the prognosis of "manic" cases.

6. Our experience with the malaria treatment of general paralysis has yielded two outstanding observations to date: (*a*) Of ten "unimproved" patients treated between three and four years ago, six are still alive and five of them have manifested no physical or mental retrogression whatever; (*b*) of sixteen full remissions, fourteen have maintained that status for more than three years, and seven for more than three years and a half.

11. It is of interest, in the light of the fairly frequent familial occurrence of manic-depressive psychosis proper, that the mother of this patient was definitely a victim of that mental disorder.

12. For full notes on the subsequent clinical course in this patient we are indebted to the courtesy of Dr. Albert M. Barrett of the Michigan State Psychopathic Hospital.

Clinical Notes, Suggestions and New Instruments

PARALYSIS OF THE RIGHT DIAPHRAGM ASSOCIATED WITH BRACHIAL PALSY *

MENDEL ZELIGS, M.D., CINCINNATI

It would appear from the scarcity of reports of diaphragmatic paralysis due to birth injury that it is a rare condition. Weigert,[1] reporting a case, was able to find in the literature reference to only four others occurring in early infancy. In none of these, with the exception of Weigert's case, was the condition verified by fluoroscopic examination.

Kofferath,[2] in 1921, and Epstein,[3] in 1927, reported cases very similar to mine; that is, diaphragmatic paralysis due to injury of the phrenic nerve, associated with a brachial palsy. Friedman and Chamberlain[4] reported a case in a child, aged 17 days, in whom the symptoms and physical signs, while indicating pneumonia, led to a diagnosis of right diaphragmatic paralysis by fluoroscopic examination. This case was also associated with a paralysis of the right arm which was noted soon after birth. Dyson[5] reported a case of diaphragmatic paralysis due to injury of the phrenic nerve. In this instance the nerve had been injured by scissors employed to cut the cord, which was around the infant's neck. There was no paralysis of the arm, and the child made a complete recovery in six months.

REPORT OF CASE

E. C., aged 4 months, was admitted to the Cincinnati General Hospital in the service of Dr. A. Graeme Mitchell, May 25, 1925, because of a gastro-intestinal disturbance. The child had been born by a difficult breech delivery at full term, and had been cyanotic and rather hard to resuscitate. There were no convulsions. Soon after birth it was noticed that the child was unable to move its right arm or forearm, although the paralysis did not involve its wrist and fingers.

The family history was unimportant. There had not been any other pregnancies, and there was no history of tuberculosis or syphilis.

Physical examination showed an undernourished child weighing 9 pounds 3 ounces (4.2 Kg.). Respiration was rapid, and there was slight retraction of the lower interspaces on the right side. There was no facial weakness. The pupils were equal and regular and reacted to light; nystagmus or

* From the B. K. Rachford Department of Pediatrics, University of Cincinnati College of Medicine.

1. Weigert, Richard: Ein geheilter Fall von Relaxatio (Eventratio) diaphragmatica, Beitr. z. klin. Chir., 1920, p. 119 (quoted by Friedman and Chamberlain).

2. Kofferath, Walter: Ueber einem Fall von rechtseitiger erbscher Lähmung und Phrenikuslähmung nach Zangenextraktion, Monatschr. f. Geburtsh. u. Gynäk. **55**: 33 (July) 1921 (quoted by Epstein).

3. Epstein, J. W.: Diaphragmatic Paralysis Resulting from Injury of the Brachial Plexus, Am. J. Dis. Child. **34**: 634 (Oct.) 1927.

4. Friedman, Emanuel; and Chamberlain, R. S.: Phrenic Nerve Injury in the New-Born, J. A. M. A. **86**: 934 (March 27) 1926.

5. Dyson, J. E.: Paralysis of Right Diaphragm in New-Born Due to Phrenic Nerve Injury, J. A. M. A. **88**: 94 (Jan. 8) 1927.

other abnormal eye movements were not noted. The head was held rotated to the left and flexed to the right, and could not be moved to the right past the midline. The lower part of the right side of the chest was somewhat bulging. The percussion note over this area extending up into the midscapular region was dull. Over the upper part of the right side of the chest and on the entire left side of the chest it was resonant. Breath sounds over the left side were somewhat exaggerated, but they were diminished over the upper right part of the chest and were markedly suppressed over the area of dulness over the lower right side of the chest; expiration in the last-mentioned region was somewhat prolonged and almost tubular in quality. Vocal resonance was increased in this region and occasional fine râles were heard. At times, the gurgling of peristaltic waves was heard in the right lower part of the chest. The heart was definitely displaced to the left. The sounds were rapid and regular, but no murmurs were heard. The liver was not palpable. The lower edge of the spleen could be just felt under the costal margin. The right biceps and triceps reflexes and the wrist jerk were absent on the right side but were normal on the left.

A diagnosis was made of right brachial palsy and torticollis due to birth injury, with a probable diaphragmatic hernia.

Fluoroscopic examination revealed an increase in the densities over the right thoracic region with the cardiac and mediastinal shadows displaced to the left. The right half of the diaphragm was high. Barium given by mouth showed that there was no bowel above the diaphragm. There was a seesaw movement of the diaphragm, so that during inspiration the right side would go up accompanied by the liver, while the left side would go down, the heart being pushed to the left and downward. A diagnosis of paralysis of the right half of the diaphragm was made.

SUMMARY AND COMMENT

Because of the close anatomic relationship of the phrenic nerve with the brachial plexis, diaphragmatic paralysis is probably of much more frequent occurrence than the number of reports of this condition would indicate. The dulness and suppression of breath sounds with the gurgling of peristaltic waves found in the right lower part of the chest made the diagnosis of a diaphragmatic hernia probable. Diaphragmatic paralysis was demonstrated by a fluoroscopic examination. If this procedure should be carried out in every child with a brachial palsy, many similar cases might be discovered.

670 Rockdale Avenue.

REPORT OF A PATIENT EXHIBITING THREE INFECTIONS WITH SYPHILIS *

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Instances of second infection with syphilis are still sufficiently infrequent to be published in detail when observed. Examples of patients exhibiting a third infection with syphilis are exceedingly rare, so much so that each case should be reported fully.

In collaboration with Dr. Harry Wassermann, I have recently reviewed, with especial reference to the time of treatment of the first infection, all the instances (about 700) of second syphilitic infection ("reinfection," "superinfection") reported in the literature since the introduction of arsphenamine, in 1910. This study, which is now being prepared for publication, discloses, among other facts, that there have thus far been published only eight satisfactory reports of patients who have acquired a third infection with syphilis. The present case report is, so far as I am aware, the first satisfactory instance in the American and English literature. This patient's record is briefly mentioned in the study referred to, the discussion and conclusions of which need not be given here. It will be noted that the patient was observed in this clinic during each of his infections.

REPORT OF CASE

First Infection.—A white man, born in 1892, first seen in the syphilis clinic of the Johns Hopkins Hospital, Dec. 4, 1914, after having been exposed about twelve weeks previously, had developed, about six weeks before admission, a penile lesion, and, about three weeks later, a rash on the back, face and knees. Lesions had appeared in the mouth about three days previously. A complete physical examination revealed a husky voice; a mucous patch on the left anterior pillar; a maculopapular eruption on the back, buttocks, and extensor surface of the arms; a much enlarged left epitrochlear gland; the remains of an inguinal adenitis, and a scar on the inner lamella of the prepuce. Arsphenamine, 0.5 Gm., was given, December 4; December 12, 0.3 Gm. was given, and Jan. 2, 1915, 0.3 Gm. was administered. The Wassermann reactions were positive, December 5 and December 13; negative, December 22, and doubtful, Jan. 2, 1915. The patient then disappeared from observation.

Second Infection.—The patient was next seen in the genito-urinary clinic, Aug. 11, 1923, nearly nine years after the first visit. He stated that he had married in 1919, and that his wife had had, subsequently, one healthy child, and no miscarriages. Three weeks prior to admission he had been exposed to venereal infection, and about eighteen days later he had noticed a painless genital lesion, "like a pimple," which was spreading. In the genito-urinary clinic, examination revealed on the superior edge of the corona a slightly indurated lesion with a clean base. Spirochetes were demonstrated. In the syphilis clinic, August 13, physical examination revealed shotty enlargement of the cervical, axillary, inguinal (especially the left) and left epitrochlear glands. On the mucous surface of the prepuce there was an oval shallow ulcer, 1 by 0.5 cm., regular in outline, having a clean base covered with a yellowish gray membrane, and showing tiny red dots indicating thrombosed capillaries. There was definite induration with a zone of surrounding edema; the lesion exuded clear serum in which were present a number of rather short spirochetes. On the same day the patient was given an injection of arsphenamine, the dosage of which was, unfortunately, not recorded, the Wassermann reaction being positive. The patient did not return.

Third Infection.—The patient was next seen in the syphilis clinic, June 10, 1927, twelve and a half years after the first infection, and nearly four years after the second. He stated that since his last visit in 1923 he had not had further treatment, and that recently he had been repeatedly exposed to venereal infection. Five days previous to admission, he had noticed a small penile lesion. A complete physical examination revealed a number of almond-sized rubbery glands in the left inguinal region and a few smaller glands in the right; the left epitrochlear gland was pea-sized and indurated, and there were varicose veins in the lower extremities. On the left side of the shaft of the penis, in the midportion, was a round lesion 1 cm. in diameter, exhibiting moderate parchment-like induration, and covered with a thin crust, removal of which disclosed a clean base with outlines rather more hemorrhagic than the remainder of the ulcer. In the clear serum two typical spirochetes were demonstrated. This primary lesion was at a different site from those seen in 1914 and in 1923. On the same day, the blood Wassermann reaction was negative and tests of the spinal fluid gave the following reactions: globulin, 0; Wassermann, negative; mastic, 0000000000.

This patient exhibited, then, on the shaft of the penis, a typical chancre, which was so diagnosed clinically without any hesitation; there was also a regional adenitis. In addition, two typical specimens of *Spirochaeta pallida* were demonstrated in the serum from the lesion.

A careful inquiry into the history and a thorough physical examination failed to reveal any evidence of syphilis which might have resulted from either of the two previous infections. Furthermore, examination of the blood serum and of the spinal fluid, each taken on the day of admission, did not disclose any signs of syphilis. Hence, this patient was considered as presenting undoubted evidence of a primary syphilitic lesion.

It is concluded, therefore, that this patient, after having had two previous infections with syphilis, acquired a third time a lesion which in every respect suggested a third primary syphilitic infection.

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* From the Medical Clinic of the Johns Hopkins Hospital, Baltimore.

Special Articles

THE FREQUENCY OF BOTULISM

REPORT OF OUTBREAKS FOR 1927

In a report [1] on outbreaks of botulism for 1926, the data were thus summarized:

There have been reported in the United States and Canada from 1899 to 1927, and including one outbreak from England and one from Argentina, 151 outbreaks, or a total of 518 cases with 347 deaths, giving a case mortality of 67 per cent; fifty-five outbreaks have been proved toxicologically and bacteriologically. If there is taken an eight year period, from 1918 to 1925, inclusive, an average of approximately thirteen outbreaks has occurred annually.

The accompanying table includes all proved and clinically probable outbreaks of botulism that have occurred in 1927.

It will be noted that only five outbreaks occurred in 1927, when the expectancy average was thirteen. It is decidedly interesting to note that all outbreaks were due to home-canned foods. The food involved in two outbreaks was home-canned corn; in two, home-canned string beans, and in the remaining outbreak, home-canned pears.

All the outbreaks reported occurred in western states. This is in accordance with established epidemiologic facts that the distribution of the spore of *B. botulinus* in the soils of western states is wide, and the number of outbreaks of botulism may be in direct ratio to this distribution and the safety of the canning methods used, particularly in the home, for fish, meat and vegetables, such as corn and string beans, and fruit, such as olives and apparently also pears.

Cases of Botulism Reported in 1927

Causative Food	Method of Preparation	Persons Ill	Deaths	Location	Type Demonstrated	Comment
1. String beans	Home canned	3	2	Rocky Ford, Colo.	No laboratory examination	Spoiled
2. Corn.....	Home canned	1	1	Ono, Shasta Co., Calif.	Type A	Spoiled
3. Pears.....	Home canned	2	2	Los Banos, Calif.	Type A	Spoiled
4. String beans	Home canned	1	1	San Francisco	Type A	Spoiled
5. Corn.....	Home canned	4	4	near Plevna, Montana	Type A	Spoiled

Outbreaks 1, 2, 3 and 4 are from the records of Dr. K. F. Meyer, Hooper Foundation, University of California; outbreak 5, from records of Montana State Board of Health, Dr. W. F. Cogswell, secretary, and Dr. Glen D. Wiles, director of division of food and drugs.

Spoilage of the food consumed was visibly present in four outbreaks; and in the fifth (home-canned corn, Montana). This was probably also true, as the home-canned corn was made into a soup by a child and other jars of the corn, as likewise those of home-canned string beans and home-canned peas found in the home, indicated spoilage. Moreover, the laboratory examinations of the contents of other jars of the home-canned corn revealed them to be toxic and to contain toxic strains of *B. botulinus*.

SUMMARY

In the United States and Canada from 1899 to 1928, including one outbreak from England and one from Argentina, 156 outbreaks have been reported, a total of 529 cases with 357 deaths, giving a case mortality of approximately 67.5 per cent. Fifty-nine outbreaks have been proved toxicologically and bacteriologically.

1. The Frequency of Botulism, J. A. M. A. **88**: 1321 (April 23) 1927.

THE STATUS OF INTRAVENOUS THERAPY

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(Continued from Vol. 88, p. 1802)

IV. INTRAVENOUS USE OF DYESTUFFS AS ANTISEPTICS

In recent years the chemotherapeutic effects of dyestuffs have been actively studied. As in other branches of chemotherapy, the attempts to use dyestuffs have proceeded from the point of view of Ehrlich's theory of chemotherapeusis; namely, to find and use dyestuffs with a powerful, possibly specific affinity for, and a consequent toxic action on the protoplasm of the parasites, and little or no affinity for that of the host.

From this standpoint, it was natural that intravenous therapy should have been tried in generalized infections, in the hope of producing a parasitotropic agent of the maximal concentration within the limits imposed by toxic organotropic effects. It was also characteristic that clinical trials should have been made before adequate animal experimentation had shown what were the toxic and lethal limits, with the result that the literature now contains a considerable number of reports of various deleterious results.

Before going on with an attempt to evaluate the results achieved, it will be well to take into account the changing point of view of the leading students of chemotherapy. Dale [1] has recently reviewed the whole subject in an able fashion, pointing out that:

> In the action of almost every remedy which has proved of value in the specific cure of infection, there are features which cannot be interpreted by a strict application of Ehrlich's distribution hypothesis, the discrepancies begin to show a new congruity among themselves—the conception of a remedy, not killing the parasites immediately, but modifying their virulence, or lowering their resistance to the body's natural defenses; of a remedy not acting as such, but in virtue of the formation from it in the body of some directly toxic product, either by a modification of its structure or by its union with some tissue constituent; of an affinity of the remedy for certain cells of the host's body leading to the formation of a depot from which, in long persistent—never dangerous concentration—the curative substance is slowly released; all these conceptions present themselves again and again as necessary for the rationalization of the effects observed.

Chemotherapeutic research is quite likely to abandon the quest of the elusive *therapia sterilisans magna*, and to assume the directions indicated by Dale.

1. Dale, H. H.: Lancet **2**: 257 (Aug. 9) 1924.

GENTIAN VIOLET

In 1912, Churchman began his studies of gentian violet, which he had found to have selective effects on certain bacteria. Since then a considerable literature has grown up concerning the intravenous use of this dye in a variety of generalized infections with positive blood cultures, particularly infections with staphylococcus and the hemolytic streptococci, and, more recently, with *Streptococcus viridans* infections. Many studies have been made of the effects of dyestuffs on localized inflammatory processes, but at present our attention will be confined to those in which the barriers have broken down sufficiently to permit invasion of the blood stream and dissemination of the infecting agent.

Churchman,[2] in the general discussion of this subject, has pointed out the wide variations in the significance of the phenomenon of bacteremia. He points out that bacteria are not to be regarded as circulating round and round for an indefinite period in the blood stream. Their source is a focus of infection, their destination other organs in which they may set up lesions, or the filtering organs. If one eliminates the source, as by complete excision of the focus, the supply is cut off. They will then disappear fairly soon from the blood stream, provided they have not already produced secondary foci elsewhere, and provided the defensive mechanism of the body has not already broken down.

Gatch, Trusler and Owen[3] also emphasize the fact that general septicemia has an extremely variable clinical course, which frequently ends in spontaneous cure. These are points which are not sufficiently taken into consideration in some of the more enthusiastic clinical reports. They failed to accomplish a *therapia sterilisans magna* in rabbits infected with *Staphylococcus aureus* and treated shortly after with gentian violet or mercurochrome intravenously. Large doses seemed to hasten death in the presence of an overwhelming infection. They observed the spontaneous recovery from sepsis of an apparently moribund patient, which was quite as miraculous as any of those attributed to the use of dyes. They also recorded the failure of intravenous dye therapy in cases of infection by *Streptococcus hemolyticus* and with vibrion septique.

Shallenberger[4] reported five cases of phlebitis following delivery or operations which were apparently relieved by intravenous injections of gentian violet in doses of 5 mg. per kilogram in a concentration of 0.5 per cent. He remarks that a concentration of 1 per cent sometimes causes localized thromboses of veins at the site of injection.

Hinton[5] reported the results of the use of gentian violet in eleven cases of extreme sepsis, with improvement noted in seven, no improvement in three, and death in one. Surgical treatment was applied in all cases in addition to the dye.

Horsley[6] was convinced of the value of gentian violet used intravenously in severe sepsis, especially when a staphylococcus was the predominating organism. Young and Hill[7] describe enthusiastically the results in seven cases treated with mercurochrome and five with gentian violet.

The possibility of using gentian violet in subacute bacterial endocarditis is suggested by Major,[8] who reported treating a negress with a *Streptococcus viridans* bacteremia. The only evidence of the existence of an endocarditis was a blowing systolic murmur transmitted toward the axilla. At any rate, two blood cultures had been positive. Four injections of the dye were made at intervals of forty-eight hours (dose 5 mg. per kilogram, concentration 1 in 500). After the first dose, fever disappeared. The patient remained entirely well during seven months. Seven blood cultures made after treatment remained sterile. The result is sufficiently encouraging to warrant further observation of this method of treatment, with due regard for the fact that there are a few recorded cases of spontaneous recovery from subacute bacterial endocarditis or at least from *Streptococcus viridans* septicemia. Major quotes a statement of Libman's that he had seen eight recoveries, and Graham and his co-workers[9] have recorded such cases. Others have failed to duplicate Major's unique experience. Reed and Lum[10] used gentian violet in *Streptococcus viridans* sepsis without observing either benefit or untoward effects.

From a consideration of the clinical reports on gentian violet, it appears that 5 mg. per kilogram of body weight is the maximum safe dose. The concentration should not be greater than 0.5 per cent, and some writers recommend a more dilute solution, 0.25 per cent.

In animal experiments on gentian violet, Gatch, Trusler and Owen[3] did not find any toxic effects from doses of 5 mg. per kilogram. If these doses were repeated every seventy-two hours, the animals lost weight. Doses of from 10 to 15 mg. per kilogram were less toxic if given in 1 in 1,000 solution in physiologic sodium chloride solution than a similar dose in plain aqueous solution. Doses of 20 mg. per kilogram produced death in a rabbit in nine days with degenerative changes in the kidneys, liver and spleen, fibrosis of the heart muscle and pulmonary congestion. A dose of 50 mg. per kilogram produced death from respiratory paralysis.

After injection in man, the skin and mucous membranes take on an alarming cyanotic color which may last for three or four hours. In some cases there is nausea. Hinton[5] noted venous thromboses in four of eleven patients treated. One patient had a pylephlebitis. The occurrence of miliary vesicular eruptions has been observed with the presence of organisms in the vesicles.

The fate of injected gentian violet is not entirely known. Churchman and Herz[11] found that it had disappeared from the blood in bacteriostatic amounts in from forty minutes to an hour after injection. They showed that the disappearance of the dye was not due to chemical combination with the blood itself. Some of the visible mucous membranes remained stained for forty-eight hours. More will be said on this subject under a general discussion of the excretion of injected dyestuffs. Hirschfelder, Malmgren and Creavy[12]

2. Churchman, J. W.: Intravenous Use of Dyes, J. A. M. A. **85:** 1849 (Dec. 12) 1925.
3. Gatch, W. D.; Trusler, H. M., and Owen, J. F.: Treatment of General Septicemia by Gentian Violet and "Mercurochrome-220 Soluble," J. A. M. A. **85:** 984 (Sept. 19) 1925.
4. Shallenberger, W. F.: Surg. Gynec. Obst. **39:** 291 (Sept.) 1924
5. Hinton, Drury: Results of the Intravenous Use of Gentian Violet in Cases of Extreme Septicemia, Ann. Surg. **81:** 687 (March) 1925.
6. Horsley, J. S., Jr.: Virginia M. Monthly **52:** 139 (June) 1925; abstr. J. A. M. A. **85:** 306 (July 25) 1925.
7. Young, H. H., and Hill, Justina H.: The Treatment of Septicemia and Local Infections by Intravenous Injections of Mercurochrome-220 Soluble and Gentian Violet, J. A. M. A. **82:** 669 (March 1) 1924.
8. Major, R. H.: Recovery from Subacute Infective Endocarditis Following Gentian Violet Therapy, J. A. M. A. **84:** 278 (Jan. 24) 1925.
9. Graham, Duncan; Oille, J. A., and Detweiler, H. K.: Further Report on Patients Recovered from Subacute Bacterial Endocarditis, abstr. J. A. M. A. **82:** 1721 (May 24) 1924.
10. Reed, A. C., and Lum, D. D.: Toxic Results of Dye Treatment in Septicemia, J. A. M. A. **83:** 1681 (Nov. 22) 1924.
11. Churchman, J. W., and Herz, L. F.: The Toxicity of Gentian Violet and Its Fate in the Animal Body, J. Exper. Med. **18:** 579, 1913.
12. Hirschfelder, A. D.; Malmgren, G., and Creavy, D.: J. Pharmacol. & Exper. Therap. **24:** 459 (Jan.) 1925.

could not find any evidences that gentian violet passed from the blood into edema fluid produced by paraphenylendiamine.

When the dye is prepared, the solution should be made from freshly distilled water collected in a sterile flask. After the dye is dissolved, enough salt to produce physiologic sodium chloride solution is added to a volume of water slightly in excess of the final required volume, which is marked on the flask. After filtration, the solution is boiled down to this mark. When cooled to body temperature, it is injected. Chilling of the solution sometimes causes visible particles of the dye to form. If this occurs, the solution is discarded.

Venous thromboses will occur less frequently if small needles are used, with gentleness in venipuncture, slow injection and the use of concentrations of the dye under 0.5 per cent.

MERCUROCHROME-220 SOLUBLE

In 1919 Young, White and Swartz [13] announced the preparation of a new germicide, dibrom-oxymercury-fluorescein, or its sodium salt, called mercurochrome-220 soluble. They described its properties and use in urinary tract infections. In 1924, Young and his co-workers [14] reported enthusiastically on the results of the intravenous use of mercurochrome in such cases, in *Streptococcus hemolyticus* sepsis, in erysipelas following or complicating scarlet fever, and in retroperitoneal and perinephritic infection. Others are finding it seemingly of value in pyelonephritis.

Avison and Koo [15] stated that they had cured chronic malaria in 100 per cent of cases treated with 0.003 Gm. of mercurochrome per kilogram. The original of this article was not seen. However, Kingsbury and Kanagarayer [16] report failure of mercurochrome therapy in malaria in two cases. In both instances, rigors recurred soon after the cessation of treatment.

Reports of toxic phenomena were meanwhile appearing from a variety of sources. Bunten,[17] Guy,[18] and Roeder and Judd [19] reported instances of salivation. Young and Hill [7] mentioned one instance of nausea, vomiting, diarrhea and transient albuminuria in a patient who received 6.8 mg. of the dye per kilogram of body weight. Reed and Lum [10] observed diarrhea with mucus and blood in the stools in several instances. Piper [20] reported anuria with death forty-eight hours after injection of mercurochrome in a patient who seemed fatally ill of *Streptococcus hemolyticus* sepsis, a result not necessarily attributable to the dye.

Dosage.—Reviewing the reported experience with mercurochrome, it appears that a single intravenous injection of not more than 5 mg. per kilogram of body weight, in a solution of 1 per cent, is reasonably free from danger. When a dose of 6 mg. per kilogram or more was employed, toxic effects were reported. Young and Hill [7] stated that dogs tolerate the dye to the extent of 10 mg. per kilogram, though one of their patients showed moderately severe mercurial poisoning with a dose of 6.8 mg. per kilogram. However, Young and Birkhaug [14] gave 7.5 mg. per kilogram without toxic effects.

Excretion.—Mercurochrome is excreted in the bile, in the stools and in the urine.

Young [14] determined the concentration of the dye in the stools after an intravenous injection and found in the first four hours 1:10,000; from the fourth to the sixth hours, 1:25,000; from the sixth to the eighth hours, 1:50,000, and from the thirteenth to the twenty-fourth hours, 1:100,000. The quantities of stool were not recorded.

The urine was measured and the concentration reached 1:10,000 in from three to five hours; 1:50,000 in from five to seven hours; 1:75,000 in from eight to twelve hours, and 1:100,000 in from thirteen to twenty-four hours. The total amount in the urine was about 15 per cent of the total amount injected.

Hill and Scott [21] have studied the excretion of mercurochrome in the bile in rabbits following the injection of 5 mg. of the dye per kilogram of body weight. They found that it appeared in the bile within fifteen minutes in a concentration of from 1:5,000 to 1:25,000 during the first two hours, and from 1:8,000 to 1:50,000 during the next two hours, with complete disappearance from the bile in twenty-four hours. After administration by mouth, it also appeared in the bile, but in lower concentration. They recommend mercurochrome in the treatment of chronic carriers of typhoid and paratyphoid infections.

Similar studies were also made by Hench, Snell and Green [22] on dogs with permanent biliary fistulas. After injection of 5 mg. per kilogram, they found that the dye appeared in fifteen minutes, and reached a maximum concentration in one hour of from 0.2 to 0.3 per cent, falling to from 0.05 to 0.15 per cent after six hours. While they find that the dye dissolved in bile in vitro has a bactericidal action on *B. coli* in a concentration of 1:20,000, the bile in which higher concentrations of the dye were excreted did not have the anticipated action against the bacteria. They suggest that this may be due to the excretion of the dye in a conjugated or otherwise altered form, so that its bactericidal action is greatly reduced.

In closing this discussion of mercurochrome, it is well to quote one of Piper's [20] remarks: "We cannot too strongly impress on the profession that in spite of reports of brilliant recoveries, this is undoubtedly a dangerous procedure and is warranted only by the severity of the condition with which we are confronted."

ACRIDINE DERIVATIVES

Thus far this discussion has concerned itself with the two dyestuffs which are at the moment in the height of fashion. Another group, whose popularity seems to be waning, deserves some attention: namely, the acridine dyes. One of these, 3.6 diamino 10 methylacridinium, has been prepared by Benda and used by Ehrlich in trypanosome infections—hence its name, trypaflavine. In 1917, interest was aroused in the use of members of this group in the treatment of bacterial infections by Browning and his co-workers,[23] who

13. Young, H. H.; White, E. C., and Swartz, E. O.: A New Germicide for Use in the Genito-Urinary Tract, J. A. M. A. **73**: 1483 (Nov. 15) 1919.
14. Young and Hill (footnote 7). Young, H. H., and Birkhaug, Konrade: The Cure of Scarlet Fever Complicated with Erysipelas and Streptococcus Septicemia, J. A. M. A. **83**: 492 (Aug. 16) 1924. Young, H. H.: Cure of a Retroperitoneal and Perinephritic Infection (Abscess) by Intravenous Injection of Mercurochrome, Bull. Johns Hopkins Hosp. **35**: 14 (Jan.) 1924.
15. Avison, D. B., and Koo, B.: China M. J. **39**: 383 (May) 1923; abstr. J. A. M. A. **85**: 149 (July 11) 1925.
16. Kingsbury, A. N., and Kanagarayer, K.: Indian M. Gaz. **60**: 355 (Aug.) 1925; abstr. J. A. M. A. **85**: 1256 (Oct. 17) 1925.
17. Bunten, J. C.: Salivation Due to Intravenous Use of Mercurochrome, J. A. M. A. **82**: 1443 (May 3) 1924.
18. Guy, C. C.: Stomatitis Following Injection of Mercurochrome-220 Soluble in a Tuberculous Sinus, J. A. M. A. **82**: 2119 (June 28) 1924.
19. Roeder, C. A., and Judd, W. H.: Nebraska M. J. **10**: 37 (Feb.) 1925; abstr. J. A. M. A. **84**: 852 (March 14) 1925. (Original not seen.)
20. Piper, E. B.: Am. J. Obst. & Gynec. **9**: 17 (Jan.) 1925.
21. Hill, Justina H., and Scott, W. W.: Mercurochrome-220 Soluble as Biliary Antiseptic, Arch. Int. Med. **35**: 503 (April) 1925.
22. Hench, Snell and Green: J. Pharmacol. & Exper. Therap. **25**: 142-143, 1925.
23. Browning, C. H.; Gulbranson, R.; Kennaway, E. L., and Thornton, L. H. D.: Flavine and Brilliant Green, Powerful Antiseptics with Low Toxicity to the Tissues, Brit. M. J. **1**: 73 (Jan. 20) 1917. Browning, C. H.; Gulbranson, R., and Thornton, L. H. D.: Ibid. **2**: 70 (July 21) 1917.

found several desirable attributes of these substances. They were found to possess high antiseptic and bactericidal action in vitro, unchanged or augmented by the action of serum, combined with relative freedom from inhibitory effect on phagocytosis.

In experimental tuberculosis, the studies of Petroff [24] and of Smith [25] did not give any evidence of a favorable effect on the progress of the tuberculosis when acridine dyes were employed, although in vitro these dyes were found to have a marked inhibitory effect on the growth of tubercle bacilli.

Intravenous injections of acriflavine have been employed by various observers in the treatment of epidemic encephalitis. It is impossible properly to evaluate the results in a disease with a symptomatology and clinical course so widely varied, without observing an enormous number of treated cases and controls.

Reports of toxic effects of the acridine dyes are not lacking. John [26] observed photosensitivity of mice injected with trypaflavine. Meleney and Zau [27] studied the effects of intravenous injections on the number of leukocytes and on their phagocytic activity, on the fragility of red corpuscles, on clotting and bleeding time, and on the development of bactericidal or bacteriostatic activity of the blood. With lethal doses, degenerative changes occurred in the convoluted tubules of the kidney and central degenerations were observed in the liver lobules. With nonlethal doses, they found a rise in blood urea content, and albumin and casts in the urine, indicating renal injury with doses as small as 2.5 mg. per kilogram. With larger doses, suppression of urine was observed. In experimental infections in animals, acriflavine was found not to possess any sterilizing action, and in view of the injury to liver and kidneys, it was felt that the dye was a handicap to the animal in its fight against infection.

The question of the value of intravenous dye therapy cannot be considered closed by any means. In this review, only a few of the dyes that have been used have been considered. Only the dyes that have been extensively studied have been included. The question of the local use of dyes is quite separate from that of their intravenous use, which is the particular phase with which we are concerned.

Our knowledge of the fate of intravenously injected dyes is progressing as the result of such studies as those of H. P. Smith.[28] This knowledge is still far from complete, and at the present moment it is extremely difficult to find any principles on which one could predict *a priori* the fate of a particular dye. Many factors undoubtedly enter in, such as the chemical structure, the nature of the charge on the particles, and the degree of dispersion. A good discussion is given by Möllendorff.[29]

Hirschfelder, Malmgren and Creavy [12] have produced edema in animals with paraphenylendiamine. The edema fluid was penetrated gradually by mercurochrome and acriflavine injected into the blood. Mercurochrome diffused more rapidly and in higher concentration than acriflavine, while gentian violet did not penetrate at all. When doses comparable to those used clinically were employed, the concentration in edema fluid was not bacteriocidal or bacteriostatic.

24. Petroff, S. A.: Am. Rev. Tuberc. **5**: 656 (Oct.) 1921.
25. Smith, M. I.: J. Pharmacol. & Exper. Therap. **20**: 419 (Jan.) 1923.
26. John, H.: Biochem. Ztschr. **155**: 159-160, 1925; Chem. Abstracts **19**: 2985, 1925.
27. Meleney, F. L., and Zau, Z.-D.: Action of Acriflavines on Blood and Certain Tissues of Rabbits, J. A. M. A. **84**: 337 (Jan. 31) 1925.
28. Smith, H. P.: The Fate of Intravenously Injected Brilliant Vital Red, Bull. Johns Hopkins Hosp. **36**: 325 (May) 1925.
29. Von Möllendorff, W.: Vitale Farbund an tierischen Zellen, Ergebn. d. Physiol. **18**: 141, 1920.

CONCLUSION

Finally, it may be said that extreme caution is indicated in clinical trials dealing with all new therapeutic agents whose mode of action and fate in the body are incompletely known. Those who employ dyes in the treatment of systemic infections should avoid toxic doses. It is important that the proper surgical care of foci of infection in septicemia should not be neglected. Convincing evidence of the beneficial effects of therapeutic procedures in infectious diseases requires careful comparison with a control series of similar cases untreated by the procedure in question. Failure to make such control observations detracts from the evidence in favor of the intravenous use of dyestuffs in many of the infections in which they have been employed.

Council on Physical Therapy

REPORT OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT. H. J. HOLMQUEST, Secretary.

AURICULATOR NOT ACCEPTABLE

The Auriculator, designed and submitted for consideration by Dr. Maury M. Stapler of Macon, Ga., is stated to be a device for treating certain classes of deafmutism. According to the designer's description, the apparatus "consists of a metal tree, in the body of which is a thumb valve. One end of the tree terminates in four branches for the attaching of a like number of pieces of rubber tubing; the other tapers off stemlike for connection by means of an additional piece of rubber tubing to a negative air pressure pump."

This apparatus is a slightly different adaptation of a principle that has long been employed in the treatment of tubotympanic adhesive processes. There is no evidence to warrant the belief that greater success can be achieved with the Auriculator in treating such conditions than can be achieved with similar existing devices of the same general nature.

Dr. Stapler, in his submitted discussion of the causes of deafmutism, claims that a great many cases of deafmutism are due to "lymphoid tissue in the post-nasal space or to tonsils and adenoids blocking the lower ends of the eustachian tubes." It is the opinion of expert otologists, however, that even the most profound obstruction to sound conduction, such as that in which the stapes becomes fixed in the oval window by adhesive bands, can produce only a modicum of deafness.

The Council on Physical Therapy declares the Auriculator inadmissible for inclusion in the list of devices for physical therapy which are acceptable (1) because no scientific evidence has been presented to warrant the claim that it can be used successfully in treating deafmutism, and (2) because the descriptive material submitted with the device contains unscientific and incorrect statements as to the causes of deafmutism.

Medical Ethics and Specialism.—Naturally, according to the ethics of his profession, a physician will care for a sick man first and take care of his bill afterward. This is all right for the sick man and for humanity, but it is bad for the community and bad for the physician and in the end bad for the sick man. Such a vicious circle naturally leads a competent man to abandon the field of family practice for that of the better cared for but only 50 per cent, as frequently necessary, "specialist."—McNeill, S. J.: *Illinois M. J.* **53**:147 (Feb.) 1928.

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SATURDAY, MARCH 10, 1928

LAUGHTER AND HEALTH

Dr. James J. Walsh, eminent as a medical historian, has written a sermon on the old saying "Laugh and grow fat." In his book[1] the genial doctor attempts to establish laughter as a major item in preventive medicine. There are chapters concerning the effects of laughter on all the different organs of the body as well as on the mind and on the practice of surgery. The main theme in all these chapters is that laughter stimulates or promotes increased activity of all the organs enumerated by increased movements of the diaphragm. Thus, Dr. Walsh assumes that movements of the diaphragm augment the activity of the liver and of the pancreas both in its internal and in its external secretions; that it augments the motility of the entire alimentary tract so that we may laugh away constipation, and, more curious still, that increased movement of the diaphragm in laughter increases the hormone output of the suprarenals, the thyroid and the parathyroids! In two or three places in the book the author recognizes that the cheerful mental state attendant on laughter, or at least synchronous with laughter, may be of some value in accounting for the favorable effects of laughter, but after each such admission he returns to his essential theme, endeavoring to explain the therapy of laughter on the basis of mechanical stimulation on virtually every organ in the chest and in the abdomen by the mechanical movements of the diaphragm in laughter. It is in the endeavor to explain the benefits of laughter on that basis that the author is led to many absurdities and unfounded statements in his physiologic reasoning.

According to Dr. Walsh, man is the only animal that laughs. He discounts "the horse laugh" and the "laughing hyena," but he forgets that, so far as movements of the diaphragm are concerned and whatever be the physiologic consequences attendant on such diaphragm movements, that is, changes in pressure in the chest, greater volume of tidal air in the lungs and greater movements of the abdominal viscera, the same effects are produced in the mooing of the cow, the howling of the dog, the braying of the donkey, and the cough and the cry of the human species. On this basis, even the sneeze is not to be sneezed at on the health program. There is, indeed, a kernel of truth in the author's theme—laugh and grow fat—not that it is healthy to grow fat but that it is conducive for continued health to be of a cheerful disposition and thus avoid the injurious physiologic sequels of the opposite mental states. It is beyond the range of sound information to assert that mechanical movements of the diaphragm stimulate the thyroid, the parathyroid, the thymus, the liver, the pancreas or the suprarenal glands. There is no evidence to this effect and the probabilities are to the contrary. If Dr. Walsh is right in his interpretation of the health factors in laughter as being the mechanical movements of the internal organs, the passing of the old flivver is a public health calamity. Indeed, one might confidently anticipate that the curve of human ills will ascend as a consequence of the loss of this efficient and almost universal vibrator.

In the chapter on laughter and the lungs, Dr. Walsh assumes that laughter increases the tidal air (that is, the volume of air inspired and expired in one breathing cycle); that the higher concentration of oxygen thus produced in the lungs leads to increased oxygen content of the blood, which in turn increases the activity of every tissue in the body. This gives the imprint of medical authority on the old but erroneous notion that the oxidation processes in the body of a normal person are increased by increasing the oxygen percentage in the inspired air. The combustion processes in the body are, indeed, governed by quite other factors.

What a pity that a book written apparently in all seriousness for the instruction of laymen should so abound in errors of facts! It says, for example:

> These ductless glands are all affected by each other's secretions, so that whatever the vibratory massage set up by laughter may accomplish, it is sure to affect the whole chain of glands.
>
> Laughter by its action through the circulation, and because of the gentle massage of ductless glands that is associated with it, promises to use nature's own methods of stimulating the ductless glands, and thus increasing their natural secretion.
>
> The massaging of the pancreas by laughter, especially after meals, undoubtedly leads to the manufacture of more of its external secretion.

As a matter of fact, the mechanical massage of the pancreas is one of the surest ways to stop the external secretion of the pancreas. The book says that diabetes is on the increase in recent years and that this is due to diminution of laughter and the consequent loss of the mechanical massage by the moving diaphragm! It is urged that "the old-fashioned, popular idea of a sluggish liver probably has a definite scientific significance." The remedy is at hand; massage the liver by

1. Walsh, J. J.: Laughter and Health, New York, D. Appleton & Co., 1928.

laughter. The author has managed, indeed, to introduce much erroneous matter on the composition and physiologic significance of bile in his chapter on the liver. When he says "Laughter constitutes an excellent method of massaging the large intestine without the necessity for any apparatus, or any auxiliaries," he seems to discourage the importance of diet in the control of this part as well as other parts of the alimentary canal; and in order to be sure that his reader does not miss his point about the large bowel he comes back with the statement that "it [the large bowel] can be stimulated by means of laughter more simply and surely than in any other way. . . . The laugh cure will beat all the new fangled methods of healing." The book says that "constipated people are not prone to laughter nearly so much as others." This is also probably true of people with diarrhea.

Dr. Walsh does not appear to see the dilemma he places himself in by denying the existence of laughter in all animals below man and then insisting that laughter is a necessary element in health as a result of the mechanical action of the diaphragm. On such a basis, how does he account for excellent health in the non-laughing animals? Laughter is an extreme expression of a cheerful or happy frame of mind. Such a frame of mind is beneficial to many body processes chiefly by preventing the opposite state of mind from interfering with them. Laughter and good health are therefore the sequels of the same central state so far as the relation holds true. It is unfortunate that the gospel of good cheer should be bolstered up by so much erroneous physiology and loose logic. It would be a terrible spectacle if continuous laughter were to become a new health fad. Already the number of grinning simpletons is appalling. Let us have laughter—but not the sadness of a forced laugh. There are more than enough truly amusing sights and incidents in the great farce known as modern civilization to give adequate stimulus for all the real laughter that may be necessary or desirable.

BARBITAL ADDICTION

Many conditions legitimately call for the medical use of depressants of the nervous system. The relief of pain is doubtless the most prominent illustration, though it is not the only occasion for the therapeutic administration of potent drugs of this class. Cerebral excitation, sleeplessness and certain disconcerting psychic states often require some counteracting influence in the interest of bodily welfare and avoidance of intense distress scarcely less tolerable than the pains of physical injury. Mankind has long made use of agents that would conduce to relief. Vicious habits have thereby become established when the administration was not supervised by an intelligent adviser such as the physician should be.

Alcohol and opium were formerly our principal hypnotics,[1] but they have been superseded largely by others. In this country the force of law as well as a modified public sentiment has served to hasten the change, which is one of substitution rather than omission. The catalogue of the newer hypnotics is a formidable list of synthetic chemical compounds, some of them exhibiting striking usefulness. Meanwhile the layman has not been slow to discover the potency of the novelties and has often applied them to his desires inadvisedly. New drug addictions have thus arisen and brought fresh problems for solution to the innocent physician. When a single practitioner can report, as Work [2] has done, a hundred cases of acute poisoning or chronic addiction with one of these drugs, the situation is evidently one that challenges serious attention.

Barbital, introduced under the trade name of veronal, has a tremendous and increasing lay popularity for self administration. Its habit-forming propensities are sufficiently well recognized to merit the special designation of barbitalism or veronalism. The opportunity is readily created. Finding himself unable to react adequately to environmental conditions, as Work points out, the man who is either constitutionally or acutely below the standard dulls his sensorium with barbital, just as other drugs are used as a refuge from circumstance. It should be remembered, he adds, that a host of proprietary hypnotics now on the market are of the same chemical series as barbital and may induce in greater or less degree the same results. Poisoning resulting from barbital taken in conjunction with one of its congeners is more difficult of treatment and offers a poorer prognosis. According to Work, addiction to barbital does not stop with the production of moderate euphoria. Judgment, orientation as to time, and insight are probably the most severely harmed of the psychic faculties and are the last to clear up in convalescence. Cases of residual defect fall almost entirely in this class. The mentality in this condition precludes complicated criminality or conspiracy, and the appearance does not inspire confidence sufficient for the consummation of any but the crudest frauds or clumsy impositions on friends. Ethical offenses, as against decency, and minor frauds, such as issuing fundless checks and forgery of an unskilful type, are well within the possibilities. Carelessness may well result in acts of an apparently criminal complexion. The paranoid reactions are usually too fleeting to endanger any one, but the dulled sensorium may lead to quasicriminal complaisance with the schemes of others. These are indeed disturbing pictures for the contemplation of nations that are endeavoring with great zeal to free themselves from the more familiar types of drug addiction. The "safe" hypnotics may become menacing to the public welfare.

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1. Pharmacology of Useful Drugs, Chicago, American Medical Association.
2. Work, Philip: Barbital (Veronal) Addiction, Arch. Neurol. & Psychiat. **19**: 324 (Feb.) 1928.

THE CONTENT OF VITAMINS A AND B IN COD LIVER OIL

Accumulated evidence seems to have established the fact that vitamin A is not identical with the antirachitic factor; as a consequence, vitamin D has been postulated. The recently published work of Clare and Soames[1] now shows that there is no parallelism or interrelationship between the content of these factors (antiophthalmic and antirachitic) in substances, such as cod liver oil, which contain both. These investigators found that some oils, which were rich in vitamin A were poor in vitamin D and that others rich in vitamin D were poor in vitamin A; in other words, that no correlation existed between the content of the two vitamins in the oils of their series. The importance of this matter may be appreciated when it is pointed out that some commercial firms whose products have satisfactory vitamin A content as measured by the pharmacopeial test for the antiophthalmic vitamin claim, ipso facto, a satisfactory content of the antirachitic factor (vitamin D), for which no test or standard is provided by the pharmacopeia.

The Council on Pharmacy and Chemistry has previously attacked this fallacy. In the new section on Vitamin Foods to appear in the chapter on Medicinal Foods in New and Nonofficial Remedies, 1928 (now on the press), our present knowledge on this subject is briefly presented. Though various more or less satisfactory methods now exist, the Council states that it does not feel justified in requiring any specific test or standard of antirachitic potency. In this situation the Council announces the policy of encouraging manufacturers to adopt and publish such methods of testing as will enable them to guarantee a vitamin D potency for their products. For accepted or submitted products the Council permits no claim of vitamin potency unless it is backed up by adequate tests for the kind of potency claimed. All accepted products must have, according to the Council's statement, a vitamin A potency of at least 400 units per gram when tested by the pharmacopeial method. For vitamin D potency a specific standard is not required, although, as has been pointed out, the manufacturer must specify adequate tests when claims of antirachitic potency are made or implied.

The widespread publicity currently and deservedly given to cod liver oil and cod liver oil preparations as vitamin foods for therapeutic use makes it important not only that physicians be informed concerning their merits but also that they be able to discriminate between a product prepared and marketed with scientific provision for determination of vitamin potency (of whichever kind claimed) and one which is not so prepared and marketed.

1. Clare, J. L. L., and Soames, K. M.: The Relative Content of the Fat-Soluble Vitamins A and D in a Series of Cod Liver Oils, Lancet 1: 150 (Jan. 21) 1928.

Current Comment

THE FREQUENCY OF BOTULISM

Elsewhere in this issue is a report on the frequency of botulism, with a summary of outbreaks for 1927. A study of the data now available again points out the total inadequacy of some of the heat processes that are being used in home canning, particularly in western states. In the Montana outbreak due to home-canned corn in the series of 1927, almost an entire family was blotted out. Numerous other glass jars of home-canned vegetables in this home were proved spoiled and toxic or contaminated with toxic strains of *B. botulinus*. The interesting thing in this outbreak was the fact that the corn was served in soup and apparently heated. The point has often been stressed, particularly for home canners in western states who may use insufficient heat processes without considering altitude, that vegetables, meat and fish so canned must be boiled thoroughly before being consumed and after being removed from the can or glass jar. In this connection, one may well censure Farmers' Bulletin 1471 of the United States Department of Agriculture, which does not contain an adequate warning against canning nonacid products at the boiling point of water, but implies that that temperature may be used when a proper pressure method is not available. In the light of these outbreaks, it may not be unwise to suggest that state boards of health, particularly those of western states, investigate and attempt to regulate the processes being used in the home canning of nonacid foods in their respective communities. Perhaps the most encouraging sign in this report is the absence of any cases attributed to commercially canned food. In fact, none have been reported since early in 1925, practically a three year period. For a number of years the commercial canning industry has realized its responsibility to the public by performing and supporting research. As a result, sterilizing processes have been carefully standardized, and apparently this industry is being safely conducted from the standpoint of public health.

THE RESPIRATORY METABOLISM OF MUSCLE

The respiratory quotient is an expression of the relation between the oxygen consumed and the carbon dioxide produced within a given period by the whole organism or any part of it that may be susceptible of independent investigation. The relationship is generally regarded as a reliable index of the foodstuffs that are being transformed in the liberation of energy. The respiratory quotient for the conversion of carbohydrates is unity; for the fats and proteins it is lower than one. There are many indications from the respiratory quotients observed that, in the body as a whole, any of the proximate principles may become the source of energy. The muscles form about two fifths of the soft tissues of the body by weight, so that the contractile tissues may naturally be assumed to play an influential part in determining the nature of the metabolic transformations incident to life. The studies published

in particular by Meyerhof [1] in recent years have given indication that the respiratory quotient of resting muscle is unity. These conclusions are based on investigation of isolated tissues. They are in harmony with the commonly expressed view that the muscle machine itself consists doubtless of protein, while carbohydrate represents the fuel by the burning of which the machine is actuated.[2] They are at variance, however, with the evidence from the living organism as a whole. Consequently Himwich and Castle [3] have undertaken the redetermination of the respiratory quotient of isolated muscle which is still part of the body and subject to its regulations. Their research indicates that, in contrast to former in vitro results, the muscle in vivo apparently has a respiratory quotient not of unity but more nearly that of the rest of the body. Perhaps this is to be explained on the assumption that the presence of one or more of the viscera or their secretions is necessary for normal metabolism. As Himwich and Castle point out, the theory of an obligative combustion of carbohydrate becomes necessary only when muscle is found to have a respiratory quotient of unity. In the light of the present data, they add, it is no longer necessary to consider carbohydrate the sole available foodstuff for resting muscle. The experiments do not exclude a transformation of fat to carbohydrate but they make it probable that if such change does occur it takes place in the muscles and in the body as a whole in the same relative proportions.

THE SUPRARENALS AND BLOOD PRESSURE

Knowledge of the suprarenal functions is yearly becoming better defined. From the observations that, on the one hand, the extirpation of the suprarenal glands invariably leads to death, thus indicating the indispensability of these organs for life, and, on the other, that physiologically potent substances can be extracted from suprarenal tissue, the details of the possibilities involved are gradually being disclosed. Foremost in the differentiation of the experimental evidence is the demonstration that from a functional standpoint the cortical and medullary portions of the suprarenals must be kept distinct. As far as survival is concerned, it is the cortex rather than the medulla that challenges attention. Hence in "replacement" therapy the peripheral layers of glandular material offer the chief prospect of usefulness, as has already been pointed out in THE JOURNAL. For the suprarenal medulla there remains the capacity of producing and secreting the powerful hormone epinephrine, for which some worth-while physiologic importance is naturally to be expected. At present, interest centers primarily in the alleged "emergency" function so vigorously championed by Cannon and the Harvard school of physiologists.[4] In time of stress the secretion of epinephrine may be of benefit in that it promotes the response of the sympathetic nervous system, giving an acceleration of the heart rate, a greater flow of blood to the vital organs, and an increased mobilization of sugar for contractile and calorigenic uses. The earlier belief that, in view of its readily demonstrable pressor effects, epinephrine normally serves to maintain the blood pressure at a proper level is being abandoned. The latest attack on the once attractive hypothesis is by Rogoff and Dominguez [5] of Western Reserve University. They have been able to record arterial pressure without the aid of anesthetics in suprarenalectomized animals which survive the extirpation operation for some time. During the residual period of good health, the loss of the glands is not attended with any significant alteration of blood pressure. Decline of the arterial tension occurs as a terminal event, associated with other symptoms that have been shown to occur in dogs dying of suprarenal insufficiency. The Cleveland physiologists assume that suppressed epinephrine secretion has little or nothing to do with the terminal fall of pressure, and that it is associated with the phenomena that result from loss of cortical suprarenal function.

1. Meyerhof, O.: Arch. f. d. ges. Physiol. **182**: 284, 1920. Meyerhof, O., and Himwich, H. E.: Ibid. **205**: 415, 1924.
2. Meyerhof, O.: Chemical Dynamics of Life Phenomena, Philadelphia, J. B. Lippincott Company, 1924.
3. Himwich, H. E., and Castle, W. B.: Studies in the Metabolism of Muscle: I. The Respiratory Quotient of Resting Muscle, Am. J. Physiol. **83**: 92 (Dec.) 1927.
4. Suprarenal Functions, editorial, J. A. M. A. **88**: 1568 (May 14) 1927.

THE CHOROID PLEXUS AND THE CEREBROSPINAL FLUID

It is characteristic of true secretory structures such as are found in the salivary, gastric and pancreatic glands, for example, that the transport of fluid proceeds through them in only one direction. Changes in the composition of the blood, which in ultimate analysis is the source of the secretion, may somewhat alter the character of the latter, particularly in a quantitative way; secretion may even be inhibited, but reversal of the flow is essentially out of the question. These "principles" of true secretory function may accordingly be applied in judging whether a fluid in the organism arises through glandular or cellular secretion rather than the less complex movement of fluids through membranes according to physicochemical laws. Until recently it has been debated whether the cerebrospinal fluid is a secretion produced by the choroid plexus rather than the product of osmotic forces. Forbes, Fremont-Smith and Wolff [6] have attempted to study the question anew by introducing pigment granules into the subarachnoid space and then injecting hypertonic salt solutions into the circulation. Under such conditions the pigment was soon found within the vessels of the choroid plexus. This indicates, as the investigators point out, that the direction of flow of cerebrospinal fluid through the choroid plexus may be reversed by increasing the osmotic pressure of the blood. Supposing the choroid plexus to be purely a secreting gland, the mechanism of such a reversal of flow would be difficult to understand. They therefore aver that their observations add to the accumulating evidence that the choroid plexus may be regarded as a semipermeable membrane, and the cerebrospinal fluid as a true dialysate.

5. Rogoff, J. M., and Dominguez, R.: Blood Pressure Following Adrenalectomy, Am. J. Physiol. **83**: 84 (Dec.) 1927.
6. Forbes, H. S.; Fremont-Smith, Frank; and Wolff, H. G.: Resorption of Cerebrospinal Fluid Through the Choroid Plexus, Arch. Neurol. & Psychiat. **19**: 73 (Jan.) 1928.

Association News

THE MINNEAPOLIS SESSION

Scientific Exhibit

The Committee on Scientific Exhibit calls attention to the fact that all applications for the Scientific Exhibit must be in the hands of the director before March 20. Any who desire an application blank may obtain it by sending a request addressed to Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago. From the applications received so far, the exhibit at the Minneapolis Session promises to be one of the most interesting in the history of the Association.

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FEBRUARY 6—MORNING

Cooperation in Medical Education and Medical Service

DR. ARTHUR DEAN BEVAN, Chicago: This address will be published in THE JOURNAL.

Medical Education in Great Britain and Ireland

SIR NORMAN WALKER, Edinburgh: This paper will be published in THE JOURNAL.

DISCUSSION

DR. WILLIAM S. THAYER, Baltimore: American medicine is the direct descendant of the University of Edinburgh. A look back into the history of our first great medical school, the University of Pennsylvania, reveals to us that almost all its founders were graduates of Edinburgh. The same is true in New York and in many other parts of the country. American medicine is the child of the University of Edinburgh. As Sir Norman spoke, I could not help thinking of the charming way in which almost unexpectedly, while studying the history of Bright last summer, I was brought back to the solid manner in which the Edinburgh clinicians were working in Bright's day. When Bright first published his researches on diseases of the kidney, he was greeted in other parts of the United Kingdom by a somewhat superior, rather patronizing sort of criticism delivered ex cathedra. In Edinburgh, after a year or two, there appeared one or two studies dealing entirely with observations and the study of those observations which supported him entirely. It is one of the most striking things that can be imagined. One word with regard to my feelings as to the teaching of medicine in America today. It is about fifteen years since an effort was begun to improve the teaching of the fundamental branches of medicine by establishing, so to speak, a kernel of university professors in a school of medicine. That has been introduced into various schools. It has led to very wide misunderstanding by the public, general and medical, for no one who was interested in this experiment which has proved, I think, a great advance, certainly no medical men, had the slightest idea that the kernel of university professors must do all the teaching in the schools. They never dreamed of such a thing. Since that great beginning of a great reform in medicine, there has been the most active discussing going on, the liveliest criticism. I can only say that I am perfectly sure that the results of medical teaching in those schools and in the other schools are far better than they were before the beginning of these changes.

The Soul of the Clinic

DR. FRANCIS W. PEABODY, Boston: This paper will be published in THE JOURNAL.

Developing a Medical Center

MR. ROBERT E. VINSON, Cleveland: It seems to me rather fitting that the chairman of this body in his opening address should have called attention to the great importance of securing the cooperation of the general public, of the university, and of hospitals in the matter of the development of modern medical education, because, after all, in our five to seven years of effort in this direction we have been passing through the interesting experience of bringing about the coordination of just those elements in the development of what we are now calling the medical center at Western Reserve University. The medical school, of course, is the primary interest in this development. But latterly it came to be seen that the school of dentistry was also a large feature in this development, and that something had to be done in the direction of the development of nursing on a university basis, very much along the same lines as had been taken already by the school of medicine and by the dental school. Prior to the beginning of this development, every hospital which was connected with the university medical school maintained its own nurses' training school. We were very fortunate in being able to secure the cooperation of virtually all the hospitals in the university group which maintained nurses' training schools in the adoption of a plan by which the training of nurses would be put in the university on the same basis as any other of the independent schools of the institution. Consequently that led to the abolition of the individual training schools in the individual hospitals, bringing them all together into a university nurses' training school in which the hospitals would continue to cooperate by furnishing us the facilities for the practical training of the nurses and in which all of the scientific training of these young women would be turned over entirely to the university school. In addition to these various elements in the university, there were the various hospitals which were connected, some of them more or less loosely, with the university organization. When this plant is completed it will give us on the university campus all the agencies which have entered into this grouping arrangement which we worked out. We also have control of the City Hospital. The Cleveland Medical Library Association erected a new building to house its library on the university campus and joined our medical group. We have also succeeded in bringing into the same grouping the Cleveland Museum of Natural History. The problem of the development of the medical center, of course, lay in first of all getting before our community and before the trustees of the university the vision of the possibility of such a thing, and then getting it before the trustees of all these various hospitals. We were finally able, after some two years of work, to bring all four of these hospitals together into one hospital organization by creating a separate corporation which was to be an operating corporation, and leaving in existence all the other various boards of trustees as the owners of the hospital properties. That idea has made a strong appeal to our people; it has made a strong appeal to the community fund agencies of the city of Cleveland, and year by year we have found that the centralization of the operation of these hospitals under one board has greatly added to the efficiency of the group as a whole. One of the great problems, of course, that one has to face in connection with the development of a group like this is the financial problem. It seemed to me that under no conceivable set of circumstances could this thing be worked out with an expenditure of less than about $30,000,000. To my intense amazement, that amount of money and more has already been raised and spent on this plan.

An M.D. Degree Five Years After High School

DR. WILBURT C. DAVISON, Durham, N. C.: The present standards of physicians can be maintained and in fact probably improved if preference in admission is given to carefully selected younger students who have intelligence and character, plus two years of college work, and the M.D. degree is given after the completion of three medical school years of forty-four weeks each. At present, although 81 per cent of American medical schools require only two years of college work for admission, preference is invariably given to candidates who have attended college for three or four years.

Consequently at the present average age of graduation, 26 years, more than one year of hospital training is rarely obtained. Since the high school of today is equivalent to the college of thirty-five years ago, when the college degree was first adopted as an entrance requirement, the keen student should be admitted after two college years of English and chemistry and one college year of physics and biology. If the summer quarter is utilized, the present four medical school years of thirty-three weeks each can be condensed to three years of forty-four weeks each. The student will be one year younger at graduation and will have an additional year for hospital and other training. He will be better prepared, for he will not have lost a fortnight or a month in October of each year getting back into the intellectual stride which had been his in the preceding June, and he will see the clinical material peculiar to the summer months. He will still have adequate vacations totaling eight weeks. A flexible curriculum can be arranged in which repetition of preclinical courses will be unnecessary. Clinical subjects should be repeated each quarter in order to utilize all of the clinical material and to have small groups of students. The size of the average staff and budget need not be increased, for instead of all of the members taking their vacations at the same time, they could arrange the teaching and decide among themselves the quarter during which each instructor would be away. The most important factor in the success of this plan is, to quote the late Mr. James B. Duke, "that great care and discrimination be exercised in admitting as students only those whose previous record shows a character, determination and application evincing a wholesome and real ambition for life."

DISCUSSION

DR. C. C. BASS, New Orleans: Tulane University Medical School is located farther south, I believe, than any of the other schools of the country, and the climate is perhaps warmer, or at least is as warm longer than perhaps the climate at any other place. The faculty has unanimously adopted the quarterly system to go into effect as soon as it can secure the permission of the board of administrators. The board of administrators is now seriously considering it, and it is expected that the quarterly system, the full four quarters as indicated by Dr. Davison, will go into effect during the present calendar year.

DR. JABEZ N. JACKSON, Kansas City, Mo.: As the temporary head of the American Medical Association, it gives me great pleasure to greet you. In the original declaration, one of the chief purposes, one of the real reasons, for the existence of the American Medical Association was to facilitate medical education. Through the American Medical Association and as a result of its agencies, rapid strides have come in medical education within the last few years. I was a member of the House of Delegates from my state at the meeting at New Orleans when this council was created, and any of you who realize the chaos in medical education then as contrasted with the highly organized condition of affairs today will realize that the Council on Medical Education and Hospitals has accomplished wonders. During the two years since the time I became President-Elect, it has been my privilege to visit various state and local medical societies, and I have been made aware of the fact that there probably is no subject which attracts much more general interest on the part of the profession than does the subject of medical education. Educational problems always lead to differences of opinion, to criticisms and to praise. I should like to remark but one thing as a suggestion of what has come to me from contact with medical men throughout the country, and that is a feeling of fear on the part of the general practitioner that medical education is lacking a conception of its fundamental obligation or its obligation to the fundamental medical profession. We must realize that probably 90 per cent of the men who study medicine do so with the object of practicing medicine afterward, and that a very considerable proportion of that number will go into practice under conditions and surroundings vastly different from those in which they are educated.

Perhaps the most masterly address ever delivered by a president of the American Medical Association was that given by Dr. W. W. Keene at the Atlantic City session somewhat more than twenty-five years ago. His plea was for the endowment of medical schools and hospitals, and when we realize that at that time there practically was no endowed medical school, that there were very few endowed hospitals and practically no endowed laboratories, and that his plea has in this short length of time brought about the results that we see, we must admit that marvels have been accomplished.

I would only suggest to you as educators who naturally know more about your own business than a physician who practices surgery in a small western community, keep your feet on the ground and remember that after all you are going to teach the ordinary doctor and you must give him an education that he can use fundamentally with the resources God has given him. He may not always have the benefits of these hospitals and these laboratories and these rich allies and aids. We all admit the value of such institutions, and yet many will have to dispense with them after they get out. Fundamental education should train a man to use his own resources and to be a competent physician with no other aids.

FEBRUARY 6—AFTERNOON

Medical Research, Medical Department of the Army

DR. M. W. IRELAND, Washington, D. C.: The activities of the Army Medical School are somewhat broad in scope, embracing teaching, research, routine laboratory work and the manufacture of certain biologic products. Two regular graduate courses are conducted each year, one for officers just entering the service and the other for officers of from five to ten years' service. In addition, courses of instruction are conducted for nurses, dietitians and enlisted technicians. The school manufactures and distributes the typhoid-paratyphoid vaccine used by the army, the navy and certain other departments of the government, and prepares and distributes diagnostic serums, antigens and certain other biologic products used as a routine throughout the army. Some conception of the magnitude of this activity may be gained when it is realized that between January, 1917, and November, 1918, approximately 17,000,000 cc. of typhoid-paratyphoid vaccine was prepared and distributed. Various phases of the unsolved problems relating to amebic dysentery are under investigation at the Army Medical School and very satisfactory progress is being made toward their solution. A simple and satisfactory liquid medium for the cultivation of the organism causing dysentery (*Endameba histolytica*) has been evolved. It also has been demonstrated that antigens made up of alcoholic extracts of cultures of *E. histolytica* contain hemolytic, cytolytic and complement binding substances. These extracts are now being used at the school in carrying out complement fixation tests as an aid in the diagnosis of amebic dysentery and appear to be highly specific. During the past two years the precipitation test (Kahn) as an aid in the diagnosis of syphilis has been subjected to rather extensive trial at many of our large general hospitals, under the general supervision of the Army Medical School. The precipitation test (Kahn) gives positive reactions at an earlier stage in syphilitic infections than does the complement fixation test as standardized for use in the army. The same statement of fact also holds good for latent syphilitic infections and cases under treatment. The precipitation test has the disadvantage of giving a considerably higher percentage of so-called false positives than does the complement fixation test as applied in our laboratories. It is doubtful if many are aware of the fact that the method of sterilizing water with anhydrous liquid chlorine now so universally applied in water supply systems throughout this country was worked out originally by an officer of the medical corps. Investigations were undertaken by the medical department research board on dengue fever, beriberi, rinderpest and surra. Many other investigations have been undertaken and completed or are now under way which are equally deserving of brief review did time permit.

Medical Research in the United States Navy

DR. E. R. STITT, Washington, D. C.: The medical research problems of the navy are largely concerned with the standardization of material, the problems of warfare, the applica-

tion of physical laws to abnormal living conditions, and public health. The naval medical supply depot, Brooklyn, inspects and tests, by methods devised there, all material purchased by the medical department of the navy. Outstanding in recent years have been new methods of testing clinical thermometers and roentgen-ray apparatus. Chemical warfare has brought its problems to the navy. A naval medical officer is detailed for duty at Edgewood Arsenal as a member of the medical research division and his studies have been productive of important result. Among the problems studied have been the treatment of phosphorus burns, the effects of burned smokeless powder, treatment of carbon monoxide poisoning, the toxicity and inflammability of refrigerants, and other problems of a confidential nature. Research designed to determine the best means of protection against toxic gases is also being conducted. Submarines, deep diving and aviation introduce problems of the greatest importance. The reduction of the carbon dioxide content of the air on submarines, means of rapidly decompressing divers without producing bends, ways to determine the qualifications of applicants for training in aviation, and the hygiene of aviation are all receiving close study and are near solution. Respiratory problems arise as the result of flying at high altitudes, and special study of these is being made.

Our island possessions Guam, Samoa and the Virgin Islands supply natural laboratories for original research in public health work, particularly in connection with the prevention and treatment of tropical diseases. Already results have been marvelous and these islands are being rapidly rid of those scourges which formerly made them the graveyards of the white race. Pellagra, gangosa, yaws, helminthiasis and typhoid no longer are the cause of alarm they once were and are being conquered. Haiti stands out as an example of the good accomplished by naval medical research. The establishment of a modern medical school, hospitals and clinics, the introduction of modern sanitation, and the improvement in the economic status of the natives are all, in large part, the result of medical research. It was in Haiti, too, that studies which seem to show the identity of gangosa, yaws and syphilis were made by naval medical officers.

A most important study has been conducted by the bureau of medicine and surgery in connection with food poisoning. For the past four years, every report of food poisoning in the navy has been given close epidemiologic study, and the results have been far reaching.

Medical Research in the Hygienic Laboratory

DR. HUGH S. CUMMING, Washington, D. C.: Under broad authorization of federal law, researches of the most fundamental nature as well as those having for their object immediately practical medical or public health application are carried on. Work is carried on not only in Washington but also in strategically located field stations. An advisory board made up of some of the most distinguished members of the profession is available for consultation and advice.

Studies have shown that pellagra is a dietary deficiency disease, the complete prevention of which is readily accomplished by a suitable diet. Tularemia, first studied by the Public Health Service as an interesting pathologic counterpart of bubonic plague in rodents, has been shown to be fairly common in man, the infection coming from rabbits either through direct handling of infected animals or through the medium of biting flies or ticks contaminated from feeding on rabbits. A method of controlling Rocky Mountain spotted fever by means of a vaccine is being worked out in the field, after laboratory demonstration of the success of the method. Undulant (Malta) fever has been shown to be not rare and the source of infection not infrequently cattle suffering from contagious abortion.

Typhus fever as it occurs in the South, where it exhibits peculiar epidemiologic features, is being studied. Tetanus following vaccination has been found to follow large, primary vaccinations only, and to occur almost exclusively when shields or dressings are employed. Amebiasis in its various aspects, trematode infestation in relation to immigration, and zoological nomenclature are among the subjects dealt with by the zoological experts.

Studies in chemotherapy, with special reference to the mechanism of the therapeutic action of arsenical compounds, methods of assay of organotherapeutic preparations, and surgical shock are under study by the pharmacologic staff.

Methods of purification of water supplies, study of reaction velocities, and the oxidation-reduction phenomenon in relation to living matter are among the subjects under investigation in the division of chemistry.

The routine work of the laboratory is confined largely to the official standardization and control of serums, vaccines and similar products; also arsenicals of the arsphenamine group. Federal license for preparations of this group is not to be regarded as official endorsement of the particular material.

The Revision of the Standard Nomenclature of Diseases and Pathologic Conditions, Injuries and Poisonings

DR. WILLIAM H. DAVIS, Washington, D. C.: "For perfecting the statistical registration of diseases, with a view to the discovery of statistical truths concerning their history, nature and phenomena, the want of a generally recognized nomenclature of diseases has long been felt as an indispensable condition. Another main use of the statistical registration of diseases on a wide scale is that it must tend to throw light on the causes of disease, many of which causes, when duly recognized, may be capable of prevention, removal or diminution." These words have been taken from the preface of the first edition in 1869 of the Nomenclature of Diseases by the Royal College of Physicians of London. A thought from the preface of the Standard Nomenclature of Diseases and Pathological Conditions, Injuries and Poisonings for the United States (1919) will also bear repetition: "Botanists would have the greatest difficulty in discussing flowers if they did not use one name for each flower, and likewise zoologists in their discussions of animals. . . . To make possible medical discussion and to facilitate the interchange of ideas, therefore, it is necessary that we all speak the same medical language, that we all call the same diseases by the same names."

Dreams of an international medical nomenclature have existed at various times but to date have proved to be only dreams. No one can predict what will be possible centuries hence, but it stands to reason that, before countries can reach a satisfactory basis for an international medical nomenclature, each country must first have a satisfactory medical nomenclature of its own.

"In 1918, at a meeting of representatives of the Army, the Navy, the Public Health Service, the War Risk Insurance, and the Council of National Defense, the possibility and desirability of creating and adopting a standard medical nomenclature were discussed." The Council of National Defense, confronted with other pressing problems, found that it could not also continue the preparation of a medical nomenclature, and a recommendation was made that the Bureau of the Census undertake the work. This recommendation was indorsed by the surgeon generals of the army, the navy and the Public Health Service. The President of the United States allotted funds to the Bureau of the Census for the preparation of the nomenclature as a war measure. To use these funds it was necessary to complete the work before July 1, 1919, and the date of the letter of transmittal of the Standard Nomenclature was June 24, 1919. The first edition was a rush job which had to be completed in a few months, but at present there is no war emergency and there is no necessity of undue speed. Sufficient time should be taken to evolve a satisfactory edition.

It is not expected that the Revised Standard Nomenclature without any alterations will prove to be just the guide desired by each branch of the medical service—army, navy, United States Public Health Service, Veterans' Bureau, state hospitals, private hospitals, groups of physicians, insurance companies, individual physicians and others, but it is hoped that the Revised Standard Nomenclature will be found a useful base on which to build any special nomenclatures needed by these various medical groups. When this second edition will be published I cannot say. A forecaster has a difficult task no matter whether he forecasts weather conditions, political

conditions or simply the date when a given report will be received from the press.

In this revised edition, as in the first edition, an earnest appeal will be made for free criticisms which will help to make any future edition of greater value, but I wish to urge particularly that every physician interested forward his suggestions now to the Census Bureau in order to make certain a worth-while second edition.

FEBRUARY 7—MORNING

Modern Preceptorships: The Value of Associate Teaching Centers in Clinical Teaching

DR. C. R. BARDEEN, Madison, Wis.: This paper will be published in THE JOURNAL.

DISCUSSION

DR. KARL DOEGE, Marshfield, Wis.: Though the value to the apprentice of this sort of teaching is the main point under discussion, the apprentice by no means is the only one who is benefited. Preceptorial teaching in our group led to a hasty inventory of what we still possessed of our stock of knowledge. Unless you have gone over your stock regularly as good merchants do, you would probably be surprised at the incompleteness of it. The general effect of the advent of the students on our preceptorial staff was to stimulate closer study and observation of our cases and more careful scrutiny of the therapeutic measures and of the problems of comfort for the patients. Our diagnoses became more exact and our talk became more guarded, giving an opinion only after we had thought two or three times rather than once. We all became better physicians. The questions the apprentice, an earnest seeker after medical knowledge, can ask are proverbially too many for even the wise to answer. In consequence, we learned to say "I don't know," gracefully and unblushingly. If the question involved a matter of knowledge that could be gotten out of the medical literature, we invariably coupled the negative reply with a request to the student to read up and find out and let us know about it. Thus the apprentice often teaches the preceptor. With eight or ten of such associate teaching centers scattered throughout the state, each of which is being markedly benefited by its effort at preceptorial teaching, great value will come to all the physicians in the respective territory and must eventually lead to the elevation of the standard of the entire medical profession. This is a result that the state university cannot ignore and must be recognized as not an unimportant by-product of the rehabilitation of the preceptor and apprenticeship plan of teaching.

The apprentices come to us surprisingly well grounded in the fundamentals of the medical sciences, but with a lack of ability and skill to draw on their fund of knowledge promptly and judiciously. It is here that the example of his preceptor is of the greatest importance. A study of his method of approaching the patient, his interested questioning into the history, his scientific but living knowledge, his sympathy, his understanding of the patient's worried mentality, his selection of such forms of treatments and nursing as are in accord with the patient's social position and financial ability, for the first time perhaps gives the apprentice an insight into the many problems the general practitioner has to deal with and gives him an inkling of what is meant by the art of medicine.

The science of medicine is taught in the university, and the skill and practice of it in the institution; but the art of medicine can be acquired only in general practice. If it should prove possible to develop clinical teachers out of these preceptors, what objection could there be to extending the benefit of such experience and ability to the profession in general, to combine undergraduate apprenticeship instruction with postgraduate fellowship meetings?

De-Departmentalizing of Clinical Medicine

DR. J. S. EVANS, Madison, Wis.: Specialism in teaching leads to organized and systematic knowledge of an individual specialty, but without adequate attention to the correlation and application of these individual subjects to one another or to the problem as a whole. Coordination in the teaching of medicine may be accomplished by one of two methods. First, by correlating parallel courses; second, by a single combined course in medicine and surgery with inclusion of specialties in part or as a whole. The latter is easier of administration than the former. Such a course established at the University of Wisconsin is based on the principle that the teaching of the practical application of knowledge acquired in the preclinical years should be in terms of the patient, either real or hypothetic, rather than by an abstract and didactic consideration of disease entities and clinical syndromes. It is built up round general medicine, with surgery and the various specialties introduced as is the case in actual practice. The block plan is also incorporated. Time assigned to specialties is devoted principally to the consideration of the special technic involved in each. Assigned reading followed by conference is the method of instruction, didactic lectures being avoided as much as possible. The plan permits concentration on the part of the student on carefully correlated reading assignments and appreciation on the part of the teacher of the methods of approach employed by his colleagues. The course begins with lectures correlating the work of the preclinical years at the same time that the student is brought into immediate contact with the patient as a clinical clerk. Environment and the diseases resulting therefrom are next considered. Study of the secondary results of the environmental diseases follows. The psychologic study of the patient (neuropsychiatry) is fitted in the course in block form. The same plan is followed in the study of urology.

The Use of the Outpatient Department in Undergraduate Medical Instruction

DR. IRVING S. CUTTER, Chicago: This paper will be published in THE JOURNAL.

Investigative Work and Library Service in a Nonteaching Hospital

MR. JOHN E. RANSOM, Toledo, Ohio: There is no nonteaching hospital. Many hospitals have a definite and important part in the teaching of medical students, interns, staff physicians, nurses, social workers, dietitians and laboratory technicians. Others teach only incidentally. The Council on Medical Education and Hospitals lists 316 hospitals that are used by medical schools in the teaching of undergraduate medical students. Certain other hospitals are used in graduate medical teaching, but they constitute a much less well defined group. There are 578 hospitals approved by the Council for intern training. To this number may be added 270 approved for residence in specialties. There are nurse training schools in 2,155 hospitals. These classifications are not exclusive, one of the other. Thus it may be seen that of the 7,000 or more hospitals in the United States, perhaps a third have some part in the education of either medical students or nurses. But for the purpose of our discussion we may well accept the narrower definition of a teaching hospital as one that is used by a medical school in undergraduate medical teaching. Of these, as already noted, there are 316.

It has become a well established principle in the hospital world that, though the primary function of a hospital is and at all times must be the rendering of adequate care to its patients, other functions are of importance and must be fulfilled if the institution is to live up to its opportunity and responsibility. Practitioners of medicine in cities in which there are no medical schools or good medical libraries are considerably handicapped if they wish to keep abreast of the developments in the medical field and to improve their abilities and skill. It is easy for them to become engrossed in the daily routine of their practice, to lose the habit of study, and to let the edge of their minds grow dull. The hospitals in such cities can more easily than not become little more than boarding houses for the sick and, so far as their managements are concerned, find the chief exercise of their faculties in balancing their budgets.

What, then, must a nonteaching hospital have and do if it is to encourage investigative work on the part of its staff? One of the most essential things, if not the most essential, is to secure a well trained full-time pathologist who is interested in investigative work and is willing and able to develop

staff interest in such activity and to cooperate with those members of the staff who wish to engage in it. He must furnish much of the inspiration, guidance and technical supervision of the work undertaken. Another essential is a hospital administration that is sympathetic with such a program. The board of trustees must believe it to be one of the functions of the hospital to help members of its staff to perfect themselves in both the science and the art of medicine and perhaps to add to the fund of knowledge concerning diseases and their prevention and cure. It must have sufficient faith in the value of such endeavor on the part of the hospital to see to it that the funds necessary to carry it on are available. Its faith must be strong enough to be able to prevent foolish sentimentality about the use of laboratory animals from hampering the work. The superintendent of the hospital must have a degree of generosity in providing essential space, time, equipment, materials and service. A more than passive interest on his part will help considerably. Such a program can hardly be inaugurated unless a few of the members of the staff are actively interested to the extent of beginning such work even before all of the facilities for its successful accomplishment are fully developed.

A brief account of our experience in attempting to inaugurate such a program may serve to indicate something of what may be accomplished. Our hospital has 123 beds. It is a private general hospital in a city of 300,000, a city which has no medical school. It has an active staff of forty men. The institution is 52 years old. It is approved for intern training by the Council on Medical Education and Hospitals. It is accredited by the American College of Surgeons and is an institutional member of the American Hospital Association. It does a fair amount of charity, but 80 per cent or more of its patients are the private patients of members of its staff and other resident physicians of the town.

After considerable searching, we secured such a pathologist as I have already described. Without great difficulty we found a room that could be used for animal surgery and a little money with which to equip it. At a small expense we were able to provide quarters for dogs and other laboratory animals in one of our outbuildings. The sheriff of the county has provided us with dogs, and the purchase of other animals has not been a great burden.

Some of the staff were interested from the first and began work in collaboration with the pathologist. During the first year, six members of the staff have carried on investigative work; others have asked for an opportunity as soon as they can be accommodated. There have been two outstanding results. Appreciating the facilities which the hospital provides and its willingness to do what it can to promote such work, one of the members of our staff is undertaking a piece of work that will entail the full-time service of a trained technician for at least a two year period. He is providing the salary of this worker, the hospital her maintenance, and our pathologist the supervision of her work. This work was started February 1 of this year.

The other result is this. We were planning an entirely new hospital plant at the time this program was launched. Space had already been allotted to the clinical laboratories, but so interested in the possibilities and values of investigative work had some of the influential members of our staff become that they convinced our board of trustees that special provision should be made for this work. The outcome has been that an entire floor has been added to one of our proposed buildings (not the main hospital building) to house a research department. The space that will be available will approximate 6,000 square feet, and it and the equipment will add between $40,000 and $50,000 to the building cost.

We are developing a library of well selected books and journals. The necessary funds come in part from our staff dues. The superintendent's secretary devotes part of her time to the library. Her services are available for any member of the staff in assembling material on any subject in which he may be interested. We have had several instances during the past year in which this service has been of considerable value in relation to the care of patients in the hospital. Exchange relationships established with other medical libraries have made available books for which there may be demand and which our library does not possess.

This library program has called for special facilities in our proposed new plant. Ample quarters have been provided for book stacks, periodical racks and a reading room. Adjacent to the library will be the hospital museum. It is our plan to make this something of much greater significance than the frequently found collection of anatomic abnormalities. It will contain specimens accompanied by histories, photographs, microscopic sections and lantern slides. It will be in charge of the medical librarian.

(To be continued)

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Society News.—Dr. William R. Bathurst, Little Rock, president of the Southern Medical Association, who was guest of honor at the meeting of the Sebastian County Medical Society, January 10, was presented with a traveling bag on behalf of the county society.——Drs. Arthur F. Hoge, Fort Worth, addressed the Benton County Medical Society, Rogers, January 12, on "Appendicitis," and Charles S. Wilson, Gentry, on "Business Methods of Physicians."——Roy Penix addressed the Craighead County Medical Society, January 21, on "Laws That Concern the Medical Profession."——Drs. Jay F. Schamberg, Philadelphia, and Thomas Parran, Jr., assistant surgeon general, U. S. Public Health Service, among others, were guests at a dinner, recently, in Hot Springs, given by the Garland County-Hot Springs Medical Association.

CONNECTICUT

New Haven's Health Record.—In general, 1927 was a favorable health year in New Haven. It is noteworthy that no deaths occurred from typhoid, measles and whooping cough and only three deaths were attributed to diphtheria. There were no cases of smallpox in the city or the state. A diphtheria immunization campaign has been carried on in New Haven for several years. During 1927, 4,457 children were immunized against diphtheria; now more than 75 per cent of the school children and at least 25 per cent of the preschool children are protected. The health department moved its laboratory to more commodious quarters; there was an increased attendance at the venereal clinics, and two more inspectors were added to the mosquito control staff. The health department has made a detailed study of the tenement houses in connection with a health survey, and there was a lower bacteria count and higher butter-fat content in the milk supply. Among the outstanding needs in the health program are a psychopathic ward and a convalescent home. The department expresses its appreciation of the cooperation of the medical and nursing professions and of the executive officers of the city and other nonofficial groups.

FLORIDA

Society News.—Dr. William D. Haggard, Nashville, Tenn., formerly President of the American Medical Association, addressed the Palm Beach County Medical Society, February 7, on "Carcinoma of the Colon," and Dr. Leonard G. Rowntree, Rochester, Minn., February 13, on "Recent Advances in Medicine."

Hospital News.—The home for the aged and infirm members of the United Brotherhood of Carpenters and Joiners of America, near Lakeland, was expected to be completed in January. The brotherhood purchased 1,826 acres there several years ago. The new building will accommodate 400 persons; it was constructed by a per capita tax of 10 cents a month on each member.——The Bayside Hospital, Tampa, has closed.——The Monroe Memorial Hospital, Ocala, was formally opened, January 6; it has a capacity of sixty-six patients, is fireproof, and is located on an 8 acre tract.

GEORGIA

Society News.—The Fulton County Medical Society, Atlanta, conducted a symposium on the pneumonias, February 2; the speakers were Drs. Joseph A. McGarity, Elmore C. Thrash, Rufus T. Dorsey, Odom O. Fanning and Henry C. Sauls.——Dr. William A. Selman read a paper on "Acute Appendicitis" before the Fulton County Medical Society, Atlanta, February 16.——Dr. Stewart R. Roberts read a paper before the Emory Medical History Club, February 27, in the Wesley Memorial Hospital, Atlanta, on "Withering and Digitalis."——Dr. William A. Upchurch addressed the Fulton County Medical Society, Atlanta, March 1, on "Pyogenic Infection of the Kidney."

Dr. de Schweinitz to Open Calhoun Lectureship.—The first address under the Abner Wellborn Calhoun lectureship of the Medical Association of Georgia will be given, May 9, by Dr. George E. de Schweinitz, Philadelphia, Past President of the American Medical Association, on "Headaches." The Calhoun lectureship has been established by the state association (THE JOURNAL, Oct. 1, 1926, p. 1156) to provide an annual lecture. Members are requested to contribute to the fund, which will be placed in a trust company to be held in trust for the association, only the interest to be used each year. The visit of Dr. de Schweinitz, who was the unanimous choice of the committee, will be without expense to the association.

ILLINOIS

Personal.—Dr. Robert M. Hathaway has been appointed director of the Pulaski County Health Unit. Dr. Hathaway formerly was director of the Daviess County Health Department, Kentucky.

Hole in Reservoir Causes Epidemic.—Fifty-four persons in Marseilles consulted physicians about January 7 because of an intestinal disorder which was traced to the public water supply. It is estimated that several times that number of persons were affected. The state department of health on request immediately made an investigation, finding evidence of pollution in the distribution system and less evidence at the pumping station. Chlorinated lime was used to sterilize the water in the reservoir, and a chlorinating machine was installed. It was difficult to convince the city officials that the water, which flows from artesian wells and always has been considered wholesome, was at fault. When the reservoir was emptied, a hole was found in the bottom of the wall which adjoins a power race carrying highly polluted water from the Illinois River. When the water in the reservoir was lower than the water in the race the polluted river water flowed into the reservoir. The fact that an ice jam in the river occurred just before the epidemic, causing the water in the race to be abnormally high, completed the chain of evidence incriminating the water supply as the cause of the epidemic.

Chicago

Sunday Public Medical Lectures.—Under the auspices of the Chicago Academy of Sciences and the northside branch of the Chicago Medical Society, a series of free public lectures on medical topics will be given at the academy, Lincoln Park and Center Street, at 3:30 p. m. on Sundays, as follows:

"Preventive Medicine," Dr. Nathan Smith Davis, III, March 18.
"Heart Disease in Childhood," Dr. Harold A. Bachmann, March 25.
"Cults, Quacks and Cures," Dr. Morris Fishbein, April 1.
"Tuberculosis," Dr. Ethan Allen Gray, April 15.
"The Preschool Child," Dr. Gustav L. Kaufmann, April 22.
"The Prevention of Contagious Disease," Dr. Archibald L. Hoyne, April 29.

Society News.—Dr. Charles B. Reed will address the Chicago Gynecological Society, March 15, 50 East Erie Street, on "Impetigo or Pyodermatitis Neonatorum," and Dr. Charles E. Galloway on "Anemia in Pregnancy."——The Chicago Urological Society will hold a joint meeting with the Chicago Medical Society, March 21, on the general subject of recent therapy in urology; the speakers will be Drs. Harry C. Rolnick, Charles M. McKenna, Harry B. Culver, Russell D. Herrold, Vincent J. O'Conor and Gustav Kolischer.——The Chicago Neurological Society will be addressed, March 15, at the Drake Hotel, by Dr. Eugene F. Traut on "Diabetes Mellitus in Disorders of the Hypophysis"; Dr. S. E. Brown will present specimens of multiple melanotic tumors of the nervous system; Dr. Lewis J. Pollock will speak on "Subjective Sensory Disturbances in Peripheral Nerve Lesions."——The Chicago Orthopedic Club was addressed, March 9, at the Crerar Library by Dr. John Albert Key, St. Louis, on "Physiology and Reactions of Joints."

INDIANA

Society News.—Dr. Gabriel Tucker, associate professor of bronchoscopy and esophagoscopy, University of Pennsylvania Graduate School of Medicine, Philadelphia, addressed a dinner meeting of the Indianapolis Medical Society, February 28, on "Bronchoscopy in Diseases of the Lungs."——Dr. Charles F. Neu, Indianapolis, addressed the St. Joseph County Medical Society, South Bend, February 17, at a banquet on "Epidemic Encephalitis."——Dr. James H. Stygall, Indianapolis, gave a demonstration of a periodic health examination before the Jefferson County Medical Society, Madison, February 27; Dr. Stygall has been elected president for 1928 of the Indiana Tuberculosis Association.

Research Fellowship Relating to Children's Health.—The Indiana University School of Medicine, Indianapolis, announces that under the Huesmann Foundation a research fellowship at the James Whitcomb Riley Hospital for Children is open to medical graduates who have had two years' internship, one of which must have been in the specialty in which research will be undertaken. Applications should be sent to Dr. Burton D. Myers, secretary of the committee, before May 15 with records and references. The service begins July 1. A personal conference will be required before final selection is made, and consideration will be given to those who have shown research ability. The appointment is for three years, at $2,500 a year, in any field relating to children's health.

IOWA

Personal.—Dr. Edward Schifferle, Creston, has retired from the relief medical employment and pension department of the C. B. & Q. Railroad after forty years of service.——Mr. Robert E. Neff, formerly administrator of the University of Indiana Hospitals, Indianapolis, has accepted the superintendency of the University of Iowa Hospital, Iowa City.

Joint Health Meeting.—The first joint program of the Iowa Tuberculosis Association, the Iowa Heart Association, the Iowa Sanatorium Association and the Iowa Trudeau Society was held at Davenport, February 23-24. Among others, Dr. Royal W. Dunham, Ottawa, Ill., spoke on "The Early Diagnosis Catches the Germ"; R. L. Reid, superintendent of schools, Keokuk, "Health Teaching Methods"; Dr. Robinson Bosworth, Rockford, Ill., "Let Your Doctor Decide," and George H. Wandel, D.D.S., Iowa City, "The Tooth Question."

Society News.—The Linn County Medical Society, Cedar Rapids, was addressed, January 19, on "Focal Infections Followed by Intracranial Complications as Met by the General Practitioner" by Dr. Cassius C. Rogers, Chicago.——Dr. Gilbert G. Cottam, Sioux Falls, S. D., addressed the Woodbury County Medical Society, Sioux City, on "The Medical Profession and the Law."——Dr. James F. Gerken, University of Iowa Extension Department, addressed the Hardin County Medical Society, January 12, on "Infant Feeding."

KENTUCKY

Bills Introduced.—Senate bill 230 provides for the establishment and maintenance in counties containing cities of the first class of a hospital for the treatment of persons affected with tuberculosis. House bill 293 provides for the regulating and licensing of chiropractors. House bill 463 provides for the reorganization of the state board of health. House bill 486 provides that all pharmacies and drug stores must be owned and operated by registered and licensed pharmacists.

LOUISIANA

Society News.—Base Hospital number 24, the Tulane World War Medical Unit, held its third reunion at the Hotel Roosevelt, New Orleans, February 2, which was approximately the tenth anniversary of its departure from Fort Oglethorpe, Georgia, for France.

Free Treatment for Crippled Children.—The orthopedic surgeons of New Orleans will examine and diagnose the condition of all crippled children brought to the free central clinic at 920 Common Street, New Orleans, March 13, March 15 and March 17, under the auspices of the Community Chest and Central Council of Social Agencies. The object of the clinic, according to the *Times-Picayune*, is to bring to the attention of responsible persons the fact that the hospitals of New Orleans, when necessary, will provide free treatment for indigent crippled children, and that the earlier in life a crippled child is treated, the better are his

chances for relief. A special effort will be made to discover those crippled children who are not in school either because of their handicaps or their tender age.

MASSACHUSETTS

Bills Introduced.—House bill 62 would repeal the provision allowing counties to make contracts for the treatment of tuberculous patients in some state sanatorium. House bill 441 would require all persons handling food and drugs to be examined and would prohibit persons having certain diseases from handling any food or drugs for sale. House bill 488 provides for compensation, on certain specific proofs, for hernia. House bill 791 would amend the nurses' law so as provide that applicants for registration must show graduation from a school which gives a three years' course in connection with a hospital of not less than fifty bed capacity. House bill 909 provides that all state institutions, police stations, public bath houses, etc., must be equipped with a pulmotor.

Personal.—Dr. Richard P. Strong, Boston, was guest of honor at a dinner given by the Harvard Union, March 1, where he exhibited moving pictures taken last year in Africa on an expedition under the auspices of the Medical School of Harvard University.——Harris H. Wilder, Ph.D., professor of zoology, Smith College, Northampton, and the author of various works on zoology and anthropology, died, February 27, aged 63.——Drs. Randall Clifford and Howard B. Sprague have been appointed assistants in medicine for one year at the Medical School of Harvard University, Boston; Dr. Charles W. Young, associate in comparative pathology for one year from September, 1928, and Dr. Frank Brostrom, a teaching fellow in orthopedic surgery for several months. ——Dr. William G. Watt has been appointed assistant dermatologist to the Holyoke Hospital, Holyoke.

MICHIGAN

Council on Graduate Instruction Established.—At the last meeting of the council of the Michigan State Medical Society, a council on graduate medical instruction was established. It is to comprise the director of the department of postgraduate medicine of the University of Michigan, the secretary of the state society, the chairman of the society's committee on medical education, the chairman of the council's committee on county society work, and the editor of the state medical journal. The Michigan State Medical Society, which has been a leader in graduate work for its members, conducted fourteen postgraduate conferences in various communities in Michigan during 1927 and has arranged for similar conferences to be held this year.

Annual Cancer Week.—The program of the annual cancer week, arranged by the cancer committee of the Wayne County Medical Society, Detroit, began, February 27. This demonstration was to interest the public in the early signs of malignant disease and to teach them to consult physicians at an early stage. Cancer clinics were held at nine Detroit hospitals by a large number of physicians, among whom was Dr. William P. Healy, New York, who gave an address at the auditorium of the society, Tuesday evening, on "Early Diagnosis of Cancer." Specimens were on display. Dr. Donald C. Balfour, Mayo Clinic, Rochester, Minn., lectured, March 6, on "Surgical Treatment of Gastric Cancer," and Drs. Fred W. Rankin and Walter E. Sistrunk of the Mayo Clinic on the value of surgery of the colon.

MINNESOTA

Health at Minneapolis.—Telegraphic reports to the U. S. Department of Commerce from sixty-eight cities with a total population of about 30 million, for the week ending February 18, indicate that the lowest mortality rate (8.6) was for Minneapolis, and that the mortality rate for the group of cities as a whole was 14. The mortality rate for Minneapolis for the corresponding week last year was 10.7, and for the group of cities, 13.5.

Society News.—The March 5 meeting of the Hennepin County Medical Society, which was on medical economics, was addressed by Drs. H. M. Johnson, Edward A. Meyerding, Willard L. Burnap, James T. Christison, George A. Earl, Elexious T. Bell, Richard E. Scammon, Ph.D., and Dr. Alfred E. Comstock, secretary, state board of medical examiners. Dr. Axel E. Hedback has been elected president of the society for the ensuing year.——Dr. Robert O. Earl, St. Paul, was reelected president of the board of directors of the Northwestern Baptist Hospital Association, and Dr. George A. Earl was reelected president of the association at the annual meeting in January.

MONTANA

Society News.—The Yellowstone Valley Medical Society will have an annual clinical session in both hospitals of Billings, March 25. Twelve visiting physicians will take part in the discussions in the afternoon sessions.——Governor Erickson has appointed a committee of physicians comprising Drs. George M. Jennings, Missoula, president of the state medical society, Byron L. Pampel, Livingston, of the state board of health, and Sidney A. Cooney, Helena, to make an investigation of the state hospital for the insane at Warm Springs.

NEW JERSEY

Bills Introduced.—Senate bill 193 would allow a county to contract for the treatment of indigent patients in privately owned and maintained hospitals. House bill 206 provides for the court appointment of expert witnesses.

Personal.—A testimonial dinner was given by the Orange Mountain Medical Society, East Orange, March 9, in honor of Dr. Thomas W. Harvey, who has completed fifty years in the practice of medicine. The speakers included Dr. Walter P. Conaway, Atlantic City, and Dr. Maximillian Danzis, Newark, president of the Essex County Medical Society; Dr. Richard D. Freeman presided.

NEW YORK

Dr. Fronczak Reappointed.—Dr. Francis E. Fronczak, who has been in charge of health work in the city of Buffalo for seventeen years, was reappointed health commissioner by unanimous vote of the reorganized board of health, February 9. Dr. Charles A. Bentz, superintendent of laboratories, has been appointed director of the division of communicable diseases, and the laboratories will remain under his charge.

Personal.—Dr. Robert H. Breed has been reappointed town health officer of Wappingers Falls for another four years. ——Dr. Reeve B. Howland has been reappointed health officer of Elmira for a four year term.——Dr. Samuel Brock has been appointed assistant professor and Drs. Rhoda Muriel Ivimey and Harold R. Merwarth, instructors in the department of neurology at the University and Bellevue Hospital Medical College.

Bills Introduced.—Senate bill 444 and house bill 1110 provide that all actions for malpractice must be brought within one year after the cause of such action accrues. Senate bill 725 would prevent pharmacy apprentices from preparing prescriptions. Senate bill 814 and house bill 1116 provide that no article which is prepared shall bear a label indicating that such article was prepared by a person who is a physician unless such person is a duly licensed physician. House bill 33 would prohibit experiments being made on a living dog. House bill 481 increases the penalty for the unlawful sale of narcotics. House bill 748 provides that actions on claims under the Workmen's Compensation Act shall be brought within two years. House bill 914 provides that allowances for tuberculous patients in the City of New York may be paid, although the patient is receiving treatment in his home, on the certificate of the city board of health. House bill 977 and house bill 1028 would allow physicians to give contraceptive treatments, including the use of instruments. House bill 979 provides that there shall be a psychologist appointed to examine defective children under the jurisdiction of the Chautauqua county court. House bill 1113 would require the labeling of cosmetic preparations used as hair dyes, hair tonic, face bleach and face cream.

New York City

Fifth Harvey Lecture.—Dr. George R. Minot, clinical professor of medicine, Medical School of Harvard University, Boston, will deliver the fifth Harvey Society lecture at the New York Academy of Medicine, Friday evening, March 16, on "The Treatment of Pernicious (Addison's) Anemia."

Personal.—The friends of Dr. Ludwig Weiss surprised him recently by a dinner to commemorate his seventy-sixth birthday.——Dr. Edward Frankel, Jr., has been elected president of the American Stomatological Association.——Prof. James Kendall, Sc.D., dean of the graduate school, New York University, will resign at the end of the academic year, it is reported, to accept the chair of chemistry at the University of Edinburgh.

"Annual Graduate Fortnight."—Arrangements are being made by the New York Academy of Medicine for the first "annual graduate fortnight" for the benefit of general practitioners and specialists. It will comprise a series of lectures

at the academy, coordinated clinics and demonstrations in hospitals on "The Problem of Aging and Old Age" to be given during the first two weeks of October. Eminent authorities will be invited to take part. Emphasis will be placed on the early recognition and prevention of conditions that are commonly ascribed to aging, with courses on functional tests of organs. It is planned to have each year an "annual graduate fortnight" on an important subject, which will be approached from various angles.

First Unit of Medical Center Opens.—The Presbyterian Hospital building in the medical center, One Hundred and Sixty-Eighth Street and Broadway, will be officially opened, March 16, for inspection by medical authorities. A few days later patients will be admitted to the hospital and outpatients to the Vanderbilt Clinic. The Joint Administrative Board of the Medical Center says that this is the tallest hospital structure in the world; it houses the Presbyterian Hospital, the Sloane Hospital for Women and the Squier Urological Clinic, and has an ultimate bed capacity of 1,177. The Anna C. Maxwell Hall will also be occupied by the incoming class of about fifty student nurses. This fifteen story structure is the residence of the Presbyterian Hospital training school pupils, having quarters for 360 nurses, a large swimming pool and a recreation hall.

Study of Epidemic Encephalitis.—The director of the William J. Matheson Survey of Epidemic Encephalitis, Dr. Josephine B. Neal, left for Europe, February 23. Her observations of what is being done there will be incorporated in a report of research that has been done in this country as the basis for an active campaign to combat this disease. The Matheson survey will be an international attack on epidemic encephalitis, which since 1917 is said to have averaged 200,000 cases. The other members of the commission are Drs. Frederick Tilney, William Darrach, Hubert S. Howe, Haven Emerson, Frederick P. Gay and William H. Park. Dr. Neal, the director, who has devoted the last seventeen years to studies of diseases of the central nervous system, is chief of the meningitis division of the research laboratory of the New York City Health Department.

Moving Pictures of Dr. Pavlov's Experiments.—The films taken in the laboratories of Drs. I. P. Pavlov and N. I. Krasnogorski, Russian physiologists, are said to be now in New York and will be exhibited to medical societies and universities. The pictures, it is reported, show the experiments by which these men sought to demonstrate that the brain is only a storehouse for reflexes and that the complex reactions of the brain are more apparent than real. They work with small children, dogs and monkeys, depicting the play activities of infants as compared with monkeys and showing, it is said, the importance that conditioned reflexes may have in the practical problems of child training. The films were produced by Sovkino of Moscow and were brought to this country by the Amkino Corporation, American distributors of Sovkino pictures.

Graduate School Changes Policy—Director Appointed.—Following a survey of the resources of the New York Post-Graduate Medical School and Hospital, which has been under way for several months, recommendations were made for a new building and better integration with the field of graduate medical teaching. Dr. Edward H. Hume, formerly president of the College of Yale in China, has been appointed director, effective, March 1; under the new régime responsibility will be centered through the newly appointed executive officer in the board of directors. Dr. Hume was born in India, the son of an American missionary; he is a graduate of Yale College and Johns Hopkins University School of Medicine. The New York Post-Graduate Medical School and Hospital was founded in 1882 by Dr. Daniel B. St. John Roosa and incorporated in 1886. More than 25,000 physicians have matriculated at the school during the last forty-two years. The directors, appreciating the need of a new program adequate to the advancement in medical practice, have decided to build up a teaching, research and financial foundation which will enable the school more adequately to serve the field of graduate medical work.

OHIO

Hospital News.—The Toledo State Hospital commemorated its fortieth anniversary, January 12. Forty years ago, the first 300 patients were transferred from the Columbus and Dayton state hospitals. Of the first 2,000 patients admitted, about seventy are still in the institution.

Society News.—Dr. William E. Lower, associate professor of genito-urinary surgery, Western Reserve University School of Medicine, Cleveland, addressed the Licking County Medical Society, Newark, March 2, on prostatic obstruction; Dr. Henry Burner Anderson on "Experiment in the Application of Diabetic Dietetics"; Dr. Christian J. Biedenkopf, modern treatment of rickets; Dr. Thomas L. Baxter, appendicitis complicating pregnancy, and Dr. Paul C. Keller, "Routine in Urine Analysis."

Illegal Practitioners Convicted.—The secretary of the state medical board, Dr. Herbert M. Platter, Columbus, reports the following recent convictions of illegal practitioners:

N. N. Simons, Akron, was tried and found guilty of conducting an office, February 24.
G. H. Bellinger, Akron, unlicensed chiropractor, was found guilty of conducting an office without a certificate, February 24.
William Kensinger, Paulding, unlicensed chiropractor, was found guilty of illegal practicing.
Charles V. McGinty was fined $500 and costs, February 10, in probate court of Erie County, $400 of the fine being suspended on condition that he quit practicing.
C. W. Ferguson, Columbus, was found guilty of opening a chiropractic office without a license and was fined $100 and costs.
V. D. Martindale, Sunbury, chiropractor, pleaded guilty to advertising, in probate court of Delaware County, and was fined $25 and costs.
Grace Loop and J. A. Loop, unlicensed chiropractors of Troy, arrested for advertising, pleaded guilty and were fined $25 and costs, which was limited on condition that they discontinue practice.

The following persons were arrested for practicing chiropractic illegally and their cases continued on promise that they would cease practicing:

C. V. Peterson, Belmont County.
E. L. Hall, Barnesville.
B. C. Hall, Barnesville.
G. F. Malin, Martins Ferry.

A number of other chiropractors were arrested for practicing without a license, but their cases have not yet been tried.

OKLAHOMA

Hospital News.—The corner stones for the state hospital for crippled children which is under construction near the University Hospital, Oklahoma City, and of the new medical building were laid by the masonic fraternal organization, February 13.

Society News.—Dr. Myron S. Gregory, Oklahoma City, addressed the Payne County Medical Society, recently, on "Mental Diseases."——Dr. Claude T. Hendershot, Tulsa, a councilor, addressed the Osage County Medical Society, February 6, on "Hypertension," and Dr. Charles J. Woods, Tulsa, on "Radium Therapy in Dermatology."——Dr. Ethan E. Waggoner, Tonkawa, addressed the Ponca City Lions Club, recently, on "The Fallacies of Criminal Insanity," and Dr. Charles L. Blanks, Ponca City, on "Care of the Eyes."——The Lincoln County Medical Society was addressed, January 4, at Chandler, by Dr. J. W. Rollins, Prague, on "Hysteria," and by Dr. William J. Wallace, Oklahoma City, on "Pyelitis."——Dr. Walter S. Stevens, medical director, department of Indian affairs, Washington, D. C., has been investigating health conditions among the Otoe and Ponca Indians.

PHILADELPHIA

Two Die of Anthrax.—It was reported, March 3, that four persons employed in a hair curling factory contracted anthrax from a shipment of animal hair from Russia and China. Two of the employees died; the other two were seriously ill.

Society News—Quasimedical Meeting.—The Philadelphia County Medical Society will hold a "quasimedical meeting," March 14; on the program will be a paper by Joseph F. Lamorelle, president judge of the Orphans' Court, on "Status of a Physician as a Witness to a Will" to be read by his son, Joseph; Ralph B. Evans, attorney for the society, will speak on "A Doctor in Court," and Dr. John M. Fisher, on "Doctors in the Courts with Special Reference to Their Duty as Professional Witnesses in Gynecologic Cases."——Dr. Orlando H. Petty addressed the Academy of Stomatology, February 23, on "Regular Health Examinations."——Dr. Thomas A. Shallow gave a lantern demonstration before the Obstetrical Society of Philadelphia, March 1, on "Craniospinal Defects of the New-Born."——A moving picture demonstration of the clinical phenomena, bronchoscopic drainage and experimental production of postoperative pulmonary atelectasis was presented before the College of Physicians of Philadelphia, March 7, by Drs. Walter Estell Lee, Gabriel Tucker, Louis H. Clerf, Isidore S. Ravdin and Eugene P. Pendergrass; Dr. John T. Farrell, Jr., read a paper on roentgenographic incidence of calcified pulmonary foci and their significance, and Dr. Charles W. Burr, a paper on "Uses of a Medical Library."——Among others, Dr. William U.

McClenahan addressed the Pathological Society of Philadelphia, March 8, on hypoglycemia associated with hypertrophy (adenoma) of the islands of Langerhans.

The New Philadelphia General Hospital.—With the recent dedication of six new units costing $5,000,000 another great step in the transformation of the Philadelphia General Hospital was consummated, and its capacity increased to a total of 2,600 patients. The Philadelphia General Hospital, which will celebrate its two hundredth anniversary in 1931, originated in a small infirmary of the almshouse at Fourth and Pine streets and, in 1767, moved to Tenth and Pine streets. In these historic buildings many of Washington's soldiers were cared for, and from them more than 200 sick and infirm were evicted by the British, of whom only eighty-two returned to the infirmary alive after General Howe left the city. New buildings were again constructed in 1834 west of the Schuylkill River in Blockley township, where the institution acquired the familiar name Blockley and where Rush, Bond, Wistar, Gerhard and Osler labored. Here was an institution comprising a home for the indigent, a hospital for mental diseases and the general hospital proper. The adoption of a new city charter and the creation of the department of welfare about 1920 brought about the separation of the purely indigent patients from those who were ill. A new hospital for mental diseases was then erected at Byberry, and the 1,400 mentally ill patients were moved there in 1926. All of this building and moving was in preparation for the rebuilding of the general hospital. The old structures at Thirty-Fourth and Pine streets and the old stone wall which surrounded the hospital were then demolished and the new hospital constructed on the site. Ground was broken for the

new units, Sept. 21, 1925; the corner stone was laid May 18, 1927, and the formal dedication took place, Dec. 7, 1927. Thus the Philadelphia Almshouse, as Mayor Kendrick said at the ground breaking ceremonies, exists only in history and Blockley is no more. As can be seen from the picture, the new hospital units are five stories high with open roofs. Patients can be brought by elevator from any floor up there for air and sun. In the center of the group is the administration building with offices, quarters for social workers and an auditorium seating 500. The new buildings add 1,250 beds, 400 for surgical cases, 400 for medical cases, 250 for children and 200 for maternity and gynecologic cases, besides laboratories, rooms for segregating patients, seven operating rooms, diet kitchens, service rooms and a clinical amphitheater seating 250. The wards are arranged along a central corridor with a transverse corridor at each floor. The T-shaped buildings were planned with the idea of simplicity of construction and functioning, but with no feature necessary for the care of the sick omitted. The hospital is a great asset to Philadelphia and a fitting expression of the desire of its citizens to care for their sick. It will in the future, as it has in the past, be a field of labor for other great men and an instrument for the good of mankind. The transformation of this institution was largely accomplished during the administrations of Dr. Wilmer Krusen as director of health and of its superintendent, Dr. Joseph C. Doane, who, during the ensuing year, is the president of the American Hospital Association.

SOUTH CAROLINA

Bills Introduced.—Senate bill 1063 provides for the licensing and regulating of chiropractors. House bill 1277 provides for sanitary regulations to be promulgated by the state board of health.

Society News.—More than 100 persons attended the annual banquet of the Marlboro County Medical Society, January 12, at Bennettsville; Dr. D. Lesesne Smith, president, South Carolina Medical Association, discussed "Upper Respiratory Infections in Children"; Dr. Wilburt C. Davison, dean, Duke University Medical School, Durham, N. C., the plans of the new medical school; Dr. Marvin Pierce Rucker, Richmond, Va., "Relation of the Female Sex Hormone to the Onset of Labor"; Dr. LeGrand Guerry, Columbia, surgery of the thyroid gland, and Dr. Marion R. Mobley, Florence, "Infections of the Maxillary Sinus."

VIRGINIA

Bills Introduced.—House T. N. 103 provides that physicians' fees for examining persons as to their sanity shall be paid whether or not such person is committed to a sanatorium. House bill 199 would include homeopathy, osteopathy, chiropractic and chiropody under the medical practice license law.

WEST VIRGINIA

Personal.—Dr. Harry B. Neagle has taken up the duties of health officer of Lewis County with headquarters at Weston. Dr. Neagle has previously engaged in public health work in Michigan and Georgia.

Society News.—Dr. Joseph Colt Bloodgood, Baltimore, gave an illustrated lecture before the Ohio County Medical Society, March 2, on "What Everybody Should Know About Cancer."——Dr. Morgan T. Morrison, Sutton, addressed the Central West Virginia Medical Society, January 27, on "The Social Evil." The next meeting of the society will be April 18 at Richwood.——Dr. Robert D. Roller, Jr., Charleston, addressed the Raleigh County Medical Society, January 26, on "Public Health in the Schools," and Dr. Adrian H. Grigg, Beckley, on "Present Status of Serums and Vaccines."——The February meeting of the Harrison County Medical Society, Clarksburg, was addressed by Dr. Eugene O. Chimene, Clarksburg, on "An Analysis of the Causes of Vomiting."——The Barbour-Randolph-Tucker County Medical Society, Elkins, held a symposium on the lung, January 24, the speakers being Drs. E. Mendel Hamilton, Belington, and Solomon G. Moore, Orr L. Perry, Charles H. Hall and Benjamin I. Golden, all of Elkins.——The Kanawha County Medical Society was addressed, February 7, at Kanawha by Drs. Earl Bennette Henson and John E. Cannaday of Charleston on fractures, and February 21 by Drs. Robert K. Buford and Henry L. Robertson of Charleston on goiter.——Dr. George Wilson, Philadelphia, addressed the Ohio County Medical Society, Wheeling, February 10, on "Diagnosis and Treatment of Neurosyphilis with Special Reference to the Use of Malaria."

GENERAL

Waiting List of Cattle for Tuberculin Testing.—There was a waiting list, January 1, of 4,103,386 cattle to be tuberculin tested. The U. S. Department of Agriculture regards this as evidence of the desire of live stock owners to free their herds from tuberculosis. At that time, there were 2,024,505 cattle in accredited herds, and 436 counties in the United States were recognized as modified accredited areas, that is, areas where the infection is not more than 0.5 per cent. During December, 935,985 cattle were tested and among them were 18,966 reactors.

Brazil Translates Joint Report on Health Education.—The commissioner of health in Rio de Janeiro, Brazil, has obtained permission to translate for distribution in that country the report of the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, prepared under the direction of Dr. Thomas D. Wood, New York, chairman. The members of the committee representing the American Medical Association were Drs. John M. Dodson, Chicago; Richard W. Corwin, Pueblo, Colo.; Edward Jackson, Denver, and Henry L. K. Shaw, Albany.

News of Epidemics.—A total of sixty cases of measles in Hopkins County, Ky., most of them in Madisonville, was reported, February 14.——During February, scores of cases of mumps were reported to have occurred in Columbus, Ind. ——Two cases of epidemic cerebral spinal meningitis in the city workhouse, St. Louis, have been reported. A quarantine was established, and prisoners gaining their release in the interim were held an additional ten days. The quarantine was lifted about February 28.——Thirty-one cases of scarlet fever were reported in Davenport, Iowa, February 15.—— Fifteen cases of smallpox were reported among residents of North Ottawa, Ill., February 17.——Forty cases of smallpox were reported in Rowlesburg, W. Va., February 10.

Another Clinical Tour of Europe.—The American College of Physical Therapy is sponsoring a party which will leave New York for a clinical tour of Europe, May 26. Twenty-one clinics will be visited, including St. Bartholomew's, Middlesex, London General and the Lord Trelor hospitals, London, Salpêtrière and American hospitals, Professor d'Arsonval's clinics, Dr. Rivière's Clinic, Paris, Professor Rollier's Clinic at Leysin, Switzerland, Zurich University, and various clinics in Vienna, Germany and Denmark. Preliminary lectures will be given on board en route to familiarize the party with what to expect at these places. Physicians interested are invited. Inquiries should be addressed to the college, clinical tour department, 25 Broadway, Suite 656, New York City.

House Committee Approves Gorgas Memorial Laboratory. —The bill, authorizing the maintenance of the Gorgas Memorial Laboratory on the Isthmus of Panama and providing that $50,000 annually be paid to the Gorgas Memorial Institute of Tropical and Preventive Medicine, Inc., for the operation of the laboratory, has been approved by the committee on foreign affairs of the House of Representatives on condition that it be constructed within five years; that each of the Latin American governments be invited to contribute annually toward its maintenance, and that the United States be represented permanently on the board directing the administration of the laboratory, while the Latin American governments contributing have the privilege of being represented on the board.

Committees of Commission on Medical Education. — The chairman of the Commission on Medical Education, A. Lawrence Lowell, Ph.D., president of Harvard University, has appointed three committees of from five to seven members each to deal with groups of problems before the commission. The chairman of the committee on premedical training is Chancellor Samuel P. Capen of the University of Buffalo; the chairman of the committee on training in the medical sciences is Lafayette B. Mendel, Sc.D., Starling professor of physiologic chemistry, Yale University School of Medicine, and the chairman of the committee on clinical training is Dr. David L. Edsall, dean of the Medical School of Harvard University. The director of study of the commission, Dr. Willard C. Rappleye, 215 Whitney Avenue, New Haven, is secretary of each of these committees.

House Committee Favors Coordination of Health Activities. —The House Committee on Interstate and Foreign Commerce has unanimously recommended the Parker bill which provides for the coordination of public health activities of the government. The committee, however, struck out the part which gave the President authority to transfer any public health unit from one division of the government service to the U. S. Public Health Service and, instead, reported the bill to the House as providing that the head of an executive department may request the Secretary of the Treasury to detail officers of the public health service to that department. The bill would give more specific statutory authority for certain activities of the public health service and would broaden others to a limited extent. It would enlarge the functions of the hygienic laboratory board, increase the pay of the surgeon general of the public health service, establish a nurse corps and place the dental and some other scientific and technical personnel on the same permanent and commissioned basis that the medical officers in the service now are. Sponsors of this legislation are confident that it will pass the house at this session.

Bequests and Donations.—The following bequests and donations have recently been announced:

Mount Sinai Hospital, New York, $15,000, by the will of the late Mrs. Virginia A. Stern.

The New York Academy of Medicine, $5,000, and his Brooklyn home valued at about $85,000, to the Physicians' Home, 901 Lexington Avenue, Brooklyn, by the will of the late Dr. Lewis D. Mason.

St. Luke's Hospital, St. Louis, three eighths of the estate of the late Mrs. Noah H. Swayne, Toledo, Ohio, after a number of individual bequests are made, estimated now at about $250,000.

Brockton Hospital, Brockton, Mass., a building for the treatment of children and a $10,000 endowment for its upkeep, by Mr. and Mrs. Harold C. Keith, in memory of their daughter, Barbara.

Lebanon Hospital, Hebrew Orphan Asylum and the Montefiore Home, New York, each $1,000, by the will of Rosa Maas.

Presbyterian Hospital, Chicago, $10,000; Chicago Home for Incurables, $5,000, and the Home for Disabled Children, Maywood, Ill., $5,000, by the will of the late Mrs. Mary E. Simmons, Chicago.

St. Agnes Hospital, White Plains, N. Y., and St. John's Hospital, Long Island City, each $2,000, by the will of the late Anna F. Maynard.

Flushing Hospital, Flushing, N. Y., $10,000, by the will of the late John H. Ridenouer.

Methodist Episcopal Hospital, Brooklyn, $6,000, by the will of the late Emma L. Hyde.

Johns Hopkins University and Johns Hopkins Hospital, Baltimore, $50,000 and $105,000, respectively, and each half of the residue of the estate of Mrs. Rebecca Lanier King, by whose will is bequeathed also to the Presbyterian Eye, Ear and Throat Charity Hospital, Baltimore, $5,000, and St. Joseph's Hospital, $2,500.

Montefiore Hospital, New York, $25,000, by the will of the late Berthold Hochschild.

Grant Hospital, Chicago, $15,000, by the will of the late Mrs. Phoebe Seipp, Chicago.

Stamford Hospital, Stamford, Conn., about $400,000, by the will of the late William H. Judd of that city.

The Good Samaritan Hospital, Portland, Ore., $15,000, by the will of the late Mrs. Elizabeth C. Good, Portland.

Montefiore Hospital, New York, $2,000, by the will of the late Reuben Robert Fogel.

St. Vincent's Hospital, New York, $5,000, by the will of the late Michael E. O'Donovan.

St. Luke's Hospital, Marquette, Mich., $20,000, by the will of Mrs. Seville H. Morse.

The Wisconsin Anti-Tuberculosis Association, $2,500, by the will of the late Charles F. Pfister, Milwaukee.

The New York Association for the Blind, about $50,000, by the will of the late Mrs. Gertrude Westbrook, Paris, Texas, on the death of her brother.

New York University, $14,450, for the study of the prevention and cure of pneumonia; about $12,000 from the estate of Charles A. Gillin for the endowment fund of the medical school; $5,000 from R. T. Crane, Jr., for experimental work in physiology, and $2,820 from many donors for the cardiac clinic fund.

New York Eye and Ear Infirmary and the Babies' Hospital, New York, and the Woman's Hospital in the State of New York, each $10,000, and the Association for Improving the Condition of the Poor and the Children's Aid Society of New York, each $20,000, by the will of the late Miss Ellen King.

St. Peters Hospital, Brooklyn, $1,000; most of the remainder of the $200,000 estate of the late Miss Eugenie A. Dittoe, to be divided between St. Vincent's Hospital and the Servants for the Relief of Incurable Cancer, New York.

CANADA

Motor Bus Tour of Europe.—Through the cooperation of the Sun Life Insurance Company, about thirty Canadian physicians, specializing in tuberculosis, will make a motor bus tour in Great Britain, France and Italy of sanatoriums and other medical and research institutions. They will also attend the meeting of the tuberculosis association in London and of the International Union Against Tuberculosis in Rome.

Personal.—A committee of laymen and physicians of Toronto is appealing for subscriptions for the purpose of honoring Toronto's veteran health officer, Dr. Charles J. C. O. Hastings, by establishing the Hastings scholarships in public health at the University of Toronto and by painting the portrait of Dr. Hastings.——Dr. Lewis R. Murray has been elected mayor of Sussex, Nova Scotia.——Dr. John S. Schram, London, Ontario, has been awarded a Carnegie medal for his gallant rescue of a man from drowning.——Dr. Charles Hunter has been appointed professor of medicine at the University of Manitoba Faculty of Medicine to succeed Dr. Edward W. Montgomery, now minister of public welfare of Manitoba.

More About State Medicine.—Commenting on an item in THE JOURNAL, Dec. 10, 1927, entitled "State Medicine in Canada," a correspondent of the *Canadian Medical Association Journal* says that it probably refers to the traveling clinics. These, it appears, are manned by physicians in the government's employ who provide surgical attention more cheaply than physicians in the districts which this clinic may visit. The correspondent believes that this phase of the government's activities will cause hardship to many physicians in the province. He says that the minister of health, George Hordley, has prepared a bill to present to the legislature for the definite establishment of state medicine. Another item notes that Mr. Hordley said at the annual meeting of the United Farm Women's Association in Calgary that the traveling clinic provided a means of receiving the best possible surgical assistance in minor operations at a cost almost one-third less than that charged by the medical profession throughout the province. He stated, it appears, that the government had no intention of interfering with the local physicians' business; at the same time, the correspondent reports, 2,346 tonsillectomies were performed by this traveling clinic. While the government organized the "clinic" to take care of needy cases in outlying districts, it is said to have invaded some of the larger towns where there are competent physicians well able to take care of such cases.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb. 18, 1918.

The Problem of Otosclerosis

Otologists in this country think that the problem of the pathogenesis of otosclerosis requires investigation and that, to make an advance, cooperation with workers in other fields is necessary. The great advances in the collateral sciences, such as biochemistry, physiology and pathology, make it impossible for one specialist to make an investigation requiring an expert understanding of all these subjects. In his presidential address on taking the chair at the Section of Otology of the Royal Society of Medicine, Dr. J. S. Fraser, well known for his work on the histopathology of otosclerosis, appealed for a national collective investigation of all aspects of the disease. The council of the section at once appointed a committee to make the necessary arrangements for initiating and coordinating the research. It may be recalled that early in 1926 the American Otological Society, appreciating the same need, appointed a committee to raise a fund to meet the expenses of such a research.

The Drawbacks of Prosperity

The registrar-general's decennial supplement for England and Wales shows how interesting statistics, usually regarded as dull and uninspiring, may become when intelligently analyzed. A fact that stands out is a greater mortality from high living and excessive drinking among the well-to-do than among the poorer. Thus diabetes affects chiefly the classes provided with the means of overeating and under-exercising. A striking example is the contrast between the farmer and the agricultural laborer. The farmer probably gets a good deal more to eat than the laborer. His diabetes mortality figure is 16, while that of the laborer is 7.3. It has long been believed that diabetes in later life is largely a disease of overnutrition. Definite statistical evidence of this is provided by the fact that the mortality from this condition fell in this country when supplies were restricted during the war, and has risen most since these have been restored. Similarly, the incidence of cirrhosis of the liver varies largely with financial means. "Mortality from this disease may be to some extent an index rather of spirit drinking than of alcoholism in general." Heavy death rates from it occur among lawyers, authors, editors, journalists and actors, with those engaged in the liquor trade heading the list. In diseases of the digestive system there was a high mortality among barristers and dentists. Barristers had the highest mortality from appendicitis; other occupations with high mortality from it were auctioneers, architects and bank officials. On the other hand, nineteen occupations in the classes described as skilled, intermediate, and unskilled workers had no deaths from appendicitis. The appendicitis death rate was two and one-half times as great for the upper and middle classes as for unskilled workers, the lowest class of the population. Diabetes, appendicitis and suicide as causes of death showed high figures among farmers. The first may be associated with free consumption of an abundant supply of food, though good living is not recognized as a cause of appendicitis. The high rate of suicide is no doubt connected with the great financial depression of the farming industry. "Plain living makes for health," says the report, "but mortality rises again as poverty increases." Farm bailiffs and foremen have the lowest mortality of the 173 occupations classified, and the Church of England clergy the second lowest.

Occupation for the Tuberculous

The generally accepted view that an open-air life is desirable for the tuberculous is questioned by Dr. F. N. Kay Menzies, health officer to the London County Council. In a report on the employment of the tuberculous, he says that the advice given to patients regarding their occupation is not always the best. Not infrequently those whose original occupations were quite suitable were advised to seek a new one, to obtain work in the open air, which is often arduous and exposed to all weathers, rather than remain in an office or workshop. Open air work is considered by many to be of vital importance to the tuberculous, whereas an occupation free from worry and providing a good wage is infinitely more valuable. Dr. Menzies insists that, with few exceptions, the best occupation for a tuberculous person is the one to which he is accustomed and at which he can earn a good income, provided it can be carried out under reasonably hygienic conditions. He finds that the working capacity of the tuberculous person whose disease is not arrested is not more than 50 per cent of the normal. Many of these partly incapacitated persons, though unfit for ordinary work, can follow employments requiring little physical effort, with hours regulated to their capacity and in a hygienic environment. Experience has shown that the training of adults over 25 in a new occupation, regarded as suitable on medical grounds, is not practicable as a general policy. The training of ex-service pensioners has proved of little practical value. Specially organized schemes for the tuberculous are suggested; (1) in association with an institution for the treatment of tuberculosis, the employees living on the premises, or in a settlement as at Papworth (described in previous letters); (2) in a suitably arranged workshop, urban or rural, the employees living in their usual homes; e. g., the Altro Workshop of New York, the Factory-in-the-Fields, Leeds, and the Spero Workshops, London. However, the employment of the tuberculous at adequate wages for their maintenance cannot be done without financial loss. On this report the Public Health Committee of the London County Council remarks: "The whole question is one of national and not merely local policy, and we hope that the minister of health will accede to the request made to him by the National Association for the Prevention of Tuberculosis and by the council to institute an inquiry into the working of tuberculosis schemes in the country."

Outbreaks of Smallpox

The ministry of health has issued a circular to boards of guardians in regard to outbreaks of smallpox in various parts of the country among casuals (vagrants who tramp about the country and are admitted to the casual wards of workhouses). Effective arrangements are enjoined to secure that any case of smallpox occurring in a casual ward shall be detected promptly and that all necessary measures adopted to prevent the spread of the disease by persons who frequent casual wards. While inspection at the time of bathing should be continued and rendered as efficient as practicable, the minister feels that, in view of the gravity of the situation, further action is required. He therefore directs that the medical officer shall examine all casuals admitted with a view to detecting cases of smallpox. A casual who would, but for the issue of this direction, have been allowed to take his discharge before the completion of two days' detention should not be allowed to do so till he has been examined by the medical officer. All febrile conditions found among the casuals, especially if accompanied by symptoms resembling those of influenza, should be regarded with suspicion, and, if possible, be isolated until a definite diagnosis has been made. Fresh cases of smallpox are continually reported from various parts of the country. During the last two weeks

seven cases have been notified in London. Thanks, no doubt, to prompt segregation, the outbreaks so far have been limited. The London County Council has distributed to physicians a valuable lecture by its smallpox officer, Dr. Wanklyn, on the diagnosis of the disease.

Sudden Death from Injection of Soap and Water to Induce Abortion

The tragic end of a bride, just returned from her honeymoon, led to the trial for manslaughter of a "medical electrician." He stated that she came to him for electrical treatment for debility and that he did not know that she was pregnant. While she was being treated, she suddenly sat up and collapsed. Medical aid was summoned, but she could not be resuscitated. The pathologist who performed the necropsy said that the deceased was a perfectly healthy woman. On opening the uterus he found something suggesting an abrasion, and soapy fluid began to escape. Sir Bernard Spilsbury (the government expert) said that the fluid was a strong solution of soap and water. Both pathologists were of opinion that death was due to shock from injection of fluid. For the defense it was urged that death was due to electric shock; if there was soapy water in the body, the woman might have injected it herself. But an electrical engineer gave evidence for the prosecution to the effect that the apparatus found in the prisoner's rooms was comparatively harmless and that the amount of current to which it was limited was only 80 volts. For the defense, Dr. F. J. Browne, professor of obstetric medicine in the University of London, who attended the necropsy on the prisoner's behalf, expressed the opinion that death did not follow immediately on the injection, as microscopic examination showed that a miscarriage had been going on for a few hours. He thought it possible that the woman might have injected herself and also agreed with the suggestion that death might result from the application of electricity at low pressure. However, the prisoner was convicted and sentenced to seven years' imprisonment. Though induction of abortion by injection of fluid into the uterus is a recognized method, in very few cases that have led to investigation in this country has it been employed.

Railway Fatalities in 1927

The year 1927 was, in the matter of fatal railway accidents, the most serious since the remarkably bad year of 1915. The latter had a total of 269 passengers killed in train accidents. Last year the total was twenty-six, which figure was made up of twelve in the head-on collision of February 14 at Hull, thirteen in the derailment of August 24 at Sevenoaks, and one in the Peterborough North collision of December 7. Some satisfaction may be found in the fact that there were only three fatal train accidents, which, in view of the dense operating conditions, is remarkable. In fact, seeing that the true test as to safety is the number of accidents and not the total fatalities, one of the remarkable features of British railway operation is the rarity of accidents that have fatal results to passengers. Since the opening of the present century there have been in all only eighty-four fatal passenger train accidents.

Success of the Village Settlement for Tuberculosis

A village settlement for tuberculosis unique in this country, where the patients live with their families and maintain themselves by work, has been described in previous letters. It is situated at Papworth in Cambridgeshire. Describing the results in a lecture at the Royal College of Physicians, the medical director, Dr. P. C. Varrier-Jones, gave them as follows: 1. Complete absence during eleven years of clinical tuberculosis in the 133 children of men and women suffering from the disease. 2. A village community maintained by the work of the industries. 3. A total of $360,000 paid in wages to the settlers since 1918. 4. An aggregate sale of goods produced by them in that time amounting to $885,000. 5. Arrest of the disease to such an extent as to justify an expectation of life thrice as long as that usually given in sanatorium statistics.

PARIS

(From Our Regular Correspondent)

Feb. 1, 1928.

The d'Herelle Bacteriophage in the Treatment of Cholera

During his researches at Lille, Dr. d'Herelle discovered, in 1917, the existence of bacteriophages, which are living organisms associated with certain bacteria, can be extracted from bacterial cultures through filtration, and possess the capacity of destroying bacteria by lysis. The main question consists in determining whether one is dealing with a filtrable virus or with an albumin secreted by a bacterium that is a parasite of the first; but the fact of the lysis of certain bacteria by the filtration products of their cultures is now established beyond all doubt, and the practical applications have been very encouraging. The bacteriophage of bacillary dysentery is employed by the Oswaldo-Cruz Institute in Brazil and causes the rapid disappearance in that country of bacillary dysentery. In Indo-China, d'Herelle succeeded in eradicating the epidemic disease affecting buffaloes, which had carried off from twenty to thirty thousand annually. D'Herelle, who is a Canadian of French extraction, went from Lille to Leyden, and is now located at Alexandria, Egypt, acting as director of the bacteriologic laboratory of the quarantine service in that city. The British government appointed him to take charge of a special mission to India to study cholera. He has returned to Paris, where he has reported the results of his mission. The bacteriophage of the vibrio of cholera, when it is found associated with the latter, engages in a struggle with the vibrio and often comes off victorious. The cholera patients who recover spontaneously are those who have in advance an abundance of bacteriophages in the intestine. One finds in India, in the Punjab, entire villages completely free from cholera, though an epidemic rages around them, owing to the fact that the drinking water in these villages contains the bacteriophage in abundance. D'Herelle succeeded in eradicating the disease and immunizing the population of large areas by transferring to the wells of the country merely from 30 to 40 cc. of the cultures of the bacteriophage, which he easily obtained. The mode of treatment is simple. A culture is prepared of the bacteriophage that is found in the stools of convalescents. These cultures are somewhat peculiar in that the bacteriophage can feed only on living matter, and, furthermore, only on that to which it is habituated. In this manner, its activity can be increased so that it will completely destroy in a few hours the bacterial cultures. Later, all that need be done is to administer a few cubic centimeters by mouth in repeated doses. As it finds an abundant food supply in the infected intestine, it develops easily, and a cure is effected with surprising rapidity, corresponding to the speed with which it destroys the vibrios. In Rajiana, which has some 3,000 inhabitants, there were fifty-six cases of cholera, from July 3 to July 22. The treatment was begun, July 21; there were four new cases, July 23, but not a single case after that. In Lalpura, with 1,500 inhabitants, there were thirty-nine cases from July 23 to July 26; July 28, there was just one new case and the epidemic was ended. The most curious thing is that the persons thus treated disseminate the bacteriophage by their stools deposited on top of the ground and thus aid in stamping out the epidemic. D'Herelle was the hardest put to it in treating the grave cases, the patients being for the most part moribund, and these were just the cases in which his aid was sought. There was a mortality of 8 per

cent in the patients treated and of 62 per cent in those not treated. It appears, therefore, that the prophylaxis of cholera will consist henceforth in combating an epidemic of the vibrion septique with an epidemic of its parasite, the bacteriophage, which, when enhanced by cultivation, rapidly destroys the vibrio. If these statements are confirmed, this will certainly be one of the greatest conquests of bacteriology.

Contraindications to Marriage in Epileptic and Tuberculous Persons

French physicians are beginning to give thought to a peculiar medicosocial question. After the war, pensions were granted to epileptic and tuberculous ex-service men. These pensions have been gradually increased until they have reached considerable proportions. Almost all these men find it easy to marry, as they are assured of leaving at death a considerable pension to the surviving widow. These marriages may result in many offspring of a deplorable nature. Therefore, the present tendency throughout the entire world, in view of principles of eugenics, is to prevent such subjects from having issue. The government of Sweden is considering legislation contemplating sterilization (surgically or by means of roentgen rays) of epileptics, degenerates and the insane. Addressing the Société de médecine de Bordeaux, M. Anglade suggested prohibiting such pensioners from marrying, on pain of having their pensions canceled.

The Resection of the Presacral Nerve

M. Ferey has employed resection of the presacral nerve in inoperable cancers of the cervix uteri to ease the pain; the results have always been favorable. The same results were achieved in pruritus vulvae, vaginismus and genital hyperexcitability. Ferey has begun to apply the method of late in painful chronic cystitis and in neoplasms of the rectum. The technic of the operation is simple, especially in thin subjects. The only difficulty lies in dislodging the nerve completely from the fat in which it is embedded. The results are prompt. There have been no untoward incidents other than a few cases of transient retention of urine.

The Intradermal Reaction to Cholesterol

An intradermal reaction to cholesterol was recently advocated, before the Société médicale des hôpitaux, by Loeper and Lemaire. The authors use, for the test, oil to which cholesterol is added in the proportion of 8 mg. per cubic centimeter. A single drop of this mixture is injected into the skin. The reaction is nil in normal subjects. On the other hand, an erythematous papule develops and persists for several days in those who manifest one of the diathetic states characterized by a tendency to precipitate cholesterol (gout, cholelithiasis, xanthoma). It is positive also in some obese persons, in some who are subject to migraine, and in subjects that were classed formerly as of slow nutrition but who, in reality, have an excess amount of cholesterol in the blood. Loeper states, however, that the test has no value unless it is positive; in that case it may be helpful in distinguishing certain types of icterus. If the test is negative, no conclusion may be reached, for various factors may intervene to maintain the cholesterol, even though in excess, in a soluble state. For instance, the previous injection of insulin prevents the reaction.

The Supplementary Equipment of Third Class Railway Coaches as Units of Ambulance Train

During the recent war, the war department was often confronted with the difficulty of securing an adequate number of freight cars that could be utilized in ambulance trains. Accordingly, the department has adopted a standard type of steel car utilizable under normal conditions as a third class coach, and equipped in advance with certain arrangements permitting it to be transformed rapidly into a unit of an ambulance train capable of transporting thirty wounded. The coaches thus equipped remain the property of the railway companies. The war department grants the railway companies an indemnity of 12,000 francs ($480) for each coach thus equipped. The needs of the army medical department are estimated at 15,000 coaches, the construction of which will be distributed over a period of years. In 1928, the sum of 605,200 francs will go to reimburse the railway companies for the installation of the described equipment.

A Leprosarium in the Hôpital St. Louis, Paris

For some time past, the service of Professor Jeanselme has centralized and interned all lepers encountered in the various hospitals of Paris. Some of the lepers here are permanent inmates—almost all of them foreigners, with an occasional Frenchman who contracted the disease in the colonies. There are about 200 lepers in Paris and its environs, and 500 more in the outside provinces. The latter are grouped together in two well known centers, Var and Morbihan. It was thought that the lepers in St. Louis Hospital were not sufficiently isolated for the safety of the other patients, although not a single case of interior contagion has ever been reported from the hospital. A special pavilion, rigorously isolated, will be constructed in one of the large courts of this immense hospital, the massive buildings of which date from the time of King Henry IV.

POLAND

(From Our Regular Correspondent)

Dec. 14, 1927.

General Meeting of the Polish League for Combating Alcoholism

The general meeting of the Polish League for Combating Alcoholism was held, Sept. 9, 1927, under the chairmanship of J. Szymański of Warsaw. Two papers were presented, one by Father Gałdyński on "The Relation of Society in General to the Fight Against Alcoholism," and another by Professor Gantkowski on "The Rôle of the Municipal and the Rural Governments in the Fight Against Alcoholism." Both papers dealt with very practical problems and awakened a lively discussion, which led to the passage of important resolutions. As a part of the general management, in addition to the present members, Dr. Dalbora of Posen and Director Namysla of Katowice were elected. It was decided also to ask the leading societies now affiliated with the league to appoint each a representative to serve on the general management. No changes were made in the composition of the committee on revision. The president of the league explained the nature of the proposed antialcoholic legislation, and urged all present to attend the seventh Polish Antialcoholism Congress that was to be held in Warsaw, Nov. 12-14, 1927.

The substance of the main resolution was as follows: 1. An appeal was made to all organizations for the advancement of social welfare, particularly those of a cultural and educational type, to make definite arrangements to enlighten their members on the subject of alcoholism; furthermore, to take action to exclude all alcoholic beverages from all entertainments and celebrations held under the auspices of such organizations, and in act, word and deed to support the efforts of the antialcoholic organizations, particularly during the week appointed for the promotion of temperance propaganda. 2. Furthermore, all public welfare organizations were urged to develop effective measures to rescue and bring about the reformation of alcohol addicts, to take energetic action to prevent the spread of the plague of alcoholism, to take the necessary steps to found temperance clubs in all the towns and cities of the country, and to establish, at least in all the county seats, consultation centers on alcoholism. 3. The

authorities of all Polish cities were asked to found consultation centers for alcohol addicts after the model of the Posen consultation center, which operates under the name "Municipal consultation center for matters pertaining to alcoholism, at the University Institute of Hygiene." 4. An appeal was addressed to all communes that through the creation and support of nonalcoholic inns, soft drink "parlors," and the like, they contribute in a rational way to the spread of temperance. 5. The congress expressed also the wish that the general management might establish railway lunch counters, municipal garden restaurants, and privately owned restaurants, which would dispense nonalcoholic beverages of good quality at reasonable prices.

Recognition of the Importance of the Dick Test

From the time of the beginning of the antiscarlatina activity in the fall of 1925 up to March 1, 1927, the State Institute of Hygiene, together with the Warsaw Department of Health, examined for susceptibility, by the Dick method, 23,657 children of Warsaw, most of them being school children aged 7 to 14. There were about 10,000 children who proved negative to the test. As was shown by a careful computation carried out on 9,708 children, the percentage of susceptible children in the public schools, including the kindergarten, ranged usually around 55; it was somewhat higher for children in the secondary schools (57) and rather lower for children of the poorer classes. For the period covered by the report (fourteen months), from Jan. 1, 1926, to March 1, 1927, 131 cases of scarlet fever were observed among children examined previously as to their susceptibility, and of that number there were 127 cases in children who gave a positive Dick reaction, and only four cases in children who gave a negative Dick reaction. Hence, whereas the relation of the susceptible to the nonsusceptible children was as 55 to 45, or 11 to 9, the relation of those becoming ill in these two groups was as 127 to 4, or 32 to 1. There is no doubt that in certain exceptional cases persons who present a negative skin reaction may come down with scarlet fever. Sometimes infection with scarlet fever occurring in Dick-negative children is associated with an apparent weakening of resistance due to other previous infective disease; for example, chickenpox. In other cases, again, the nonappearance of the skin reaction to the toxin probably does not depend, as it usually does, on the presence of antitoxin in the organism but on a certain inability of the skin to react to the toxin, as is known to take place in laboratory animals (Brokman and Sparrow). These are interesting reasons for research on the nature of the Dick reaction. However, from the epidemiologic point of view, it must be admitted that the recognition of the susceptibility and nonsusceptibility to scarlet fever with the aid of the Dick test is a sufficiently accurate and certain method on which to base the indications for active immunization (N. Gąsiorowski).

Morbidity from Scarlet Fever

During the period from the time when vaccination was first begun in the fall of 1925 and extending up to March 1, 1927, a total of eighteen months, there were observed 160 cases of illness from scarlet fever in children protectively vaccinated with scarlatina toxin (the Dick vaccine) or with the toxin together with bacteria (the Gabryczewski vaccine), ninety-nine of which cases were in children who received the full dose of vaccine (3,500 skin test units) and sixty-one cases in children who did not receive the complete dosage. However, the percentage of children taken ill is considerably lower in the group vaccinated three times, receiving the complete dose of toxin, than in the group that did not complete the vaccination, or, instead of receiving 3,500 skin test doses, were given only the usual smaller dose of 500 skin test units, the primary vaccination, or 1,500 skin test units, the secondary vaccination. The influence of vaccination in lowering the percentage of children taken ill is established beyond all doubt. The percentage of illness among the vaccinated as well as among the nonvaccinated children is lowered with advancing age. The percentage of illness decreased with the amount of toxin administered. The group of vaccinated children gave three to four times less illness than the corresponding group of nonvaccinated children. The normal development of resistance appears to be accelerated under the influence of active immunization. A large number of abortive cases and a small number of complications point to the sure influence of vaccination on the course of the disease.

The Importance of Protective Inoculation Against Scarlet Fever

A report has been issued on the results of antiscarlatina vaccination in the region of Warsaw during the period beginning with the fall of 1925 and extending to March 1, 1927. The fall of 1926 brought a considerable aggravation of the scarlet fever epidemic throughout Poland. In Warsaw, the greatest visitation occurred during August, September and October. In December it began to subside, and receded slowly. The incidence of the epidemic was almost three times as great as that of the previous year, giving rise in Warsaw, in 1926, to 4,640 cases, and, during January and February, 1927, to 447 cases, making a total of 5,087 cases during the fourteen month period extending up to March 1, 1927.

Antiscarlatina vaccinations on a wide scale were begun in Warsaw during the fall of 1925. They were first introduced in September by the State Institute of Hygiene, and, during the fore part of October, the Department of Health of Warsaw began to cooperate with the institute, and developed in a short time a wide field of activity. A special vaccinating staff was appointed to assume the task of vaccinating all school children. During the course of two and a half months, up to January, 1926, there were about 12,406 children of the public schools examined as to their susceptibility and vaccinated when found susceptible.

During the epidemic of the fall of 1925, the number of children vaccinated was still small, so that it is difficult to appraise the results. Only with the advent of the more extensive epidemic of 1926 could the question be answered as to whether the method as demonstrated by laboratory experiments and observed clinically would give practical results when applied to actual conditions in life, and as to whether the revival of the method by the Americans, on the strength of new discoveries in regard to Gabryczewski's conception, would give effectual protection against scarlet fever. By the fall of 1926, several thousand children had been vaccinated in Warsaw, and it is now possible to report further results. Omitting certain incongruities that it is impossible to avoid in any extensive statistical report, it is plainly evident that the appraisal of the results of the series of vaccinations is entirely satisfactory.

The figures of future reports will doubtless vary considerably from the present, owing to the fact that the method of protective vaccination against scarlet fever has been recently modified and improved. During the period covered by the report, the children were inoculated three times, receiving usually 3,500 skin test doses. In 1926, to the toxins there were added killed bacteria, and in certain cases a fourth vaccination was resorted to, by which the aggregate dose was increased to 6,500 skin test units. These doses are no longer given, for recent experiments with scarlatina antitoxin (Celarek) have shown that up to 20,000, and even 40,000, skin test doses may be given at one administration in the form of antitoxin, increasing in this manner the speed and the efficacy of the protection.

GENEVA

(From Our Regular Correspondent)

Jan. 26, 1928.

Surgery of the Sympathetic

The Revilliod-Julliard lecture was recently delivered to the Medical Society of Geneva by Prof. René Leriche of Strasbourg. His subject was "The Surgery of the Sympathetic and Its Results." The nervous mechanism of angina pectoris is always the same, no matter what may be the cause of the attack. A rational surgical treatment should aim to interrupt the ascending fibers. A study of one hundred operative cases of angina pectoris, ninety-four of which can be used in statistical analyses, shows that the attacks disappear in about 62 per cent of the cases. In most of these, attacks have been absent for more than three months, but a longer time is necessary before conclusions can be reached as to the permanence of the results. The few failures and most of the mortality (which is 13 per cent) are to be attributed to defective technic and to operations done in cases in which operation is not indicated.

Surgical treatment of angina pectoris does more than to suppress pain. The attacks, with all their symptoms, subside; the distress and retrosternal constriction disappear. In most cases the arterial pressure drops. This postoperative hypotension, which is a great help for the heart, is explained as the result of sympathectomy as well as the cessation of the attacks. The electrocardiogram reveals improvement in the cardiac function. Many patients have been able to return to their work.

A study of ninety-four cases of total sympathectomy shows results that are no better than those in the partial operation, and the mortality is far higher. It is not an indifferent matter to deprive the heart of its eccentric innervation; hence the stellate ganglion must not be removed.

Leriche divides the communicating ramifications of the inferior cervical ganglion and those of the intermediary ganglion, combined with sympathectomy above the inferior cervical ganglion and division of the vertebral nerve. To this may be added division of the upper communicating branches if, in a given case, the pain radiates to the head and neck. This was done in a recent case with immediate good results. Leriche's technic is delicate but not difficult; it is anatomically simple and can always be done with local anesthesia. Fourteen cases have been done without any notable incident arising.

Thoracoplasty

Drs. Piotet and Urech of Lausanne state that the first costal resections intended to compress tuberculous cavities were performed in that city in 1880, under the direction of the late Professor Cerenville. The procedure used in Switzerland known by the name of Roux's thoracoplasty distinctly differs from the French operation as devised by Professor Berard of Lyons and Sauerbruch's operation used in Germany. Roux's operation has the great advantage that it is carried out under the control of the eye and hand of the operator, while at the same time the muscles of the shoulder are left perfectly intact. The indications for the operation are very advanced unilateral pulmonary tuberculosis in which all other treatments (sanatorium and especially artificial pneumothorax) have failed. Of thirty-one patients operated on at the cantonal hospital, Lausanne (1920-1926), four died a few days after the operation, seven were lost sight of, while twenty were followed with these results: two deaths, one slight improvement, four distinct improvements, eleven marked ameliorations and two complete recoveries. These results furnish ground for hope of partial or complete recovery in certain desperate cases.

BELGIUM

(From Our Regular Correspondent)

Jan. 16, 1928.

The University of Louvain

In the previous letter, an account was given of the celebration of the fifth centenary of the founding of the University of Louvain. Further historical data concerning the eminent faculties that have been recently so severely tried, and so generously succored (more particularly, by the United States), may be of interest. It was in 1425 that Pope Martin V established, by a special bull, the three faculties of arts, law and medicine, and that John IV, duke of Brabant, turned over to the rector the jurisdiction of the university. The sixteenth century witnessed the long-drawn-out conflict between catholicism and protestantism, which latter faith, during this period, extended its limits rapidly, but against which the theologians of Louvain were able to contend successfully. Vesalius, the anatomist, whose name was the glory of the Faculté de médecine, and Justus Lipsius, the eminent humanist, were the men whose universal fame brought to Louvain so many teachers and so many pupils. In the seventeenth century, during the reign of Albert and Isabella, it was the faculty of law that attracted special attention, chiefly owing to the creation of its celebrated library. This was the period of the fierce struggles against Jansenism. Then came the upheavals associated with the French Revolution. The University of Louvain was suppressed in 1797, and was not reestablished at Louvain until 1835. After that date, the prosperity that Belgium enjoyed until 1914 found its expression at Louvain in the flourishing of science and belles-lettres. To the age-old faculties of theology, philosophy, law, science and medicine have been added successively the special schools: the school of agriculture, the school of oriental studies, the historical seminary, the school of political and social sciences, the school of commercial and consular sciences, and the school for the study of colonial affairs. Since the armistice, the university has developed still further. The new cancer institute, the surgical institute, the university city so called, and the new hospital for the insane have been added.

The Ethics of an Auxiliary Consultation Office

In view of the present excess of physicians, the problem of physicians establishing an auxiliary consultation office is important. There are no legal objections in Belgium to a physician having more than one office of consultation in the country. The law did not foresee, however, the great distances that can now be rapidly covered in a day, and, consequently, it could not anticipate the creation of multiple practices such as are being developed in our times.

On the other hand, it is a question whether a physician should be prohibited from practicing in conformity with regularly established fee schedules, in various cities.

The International Bulletin, the Organ of the International Congress of Military Medicine and Military Pharmacy

At the fourth International Congress of Military Medicine and Pharmacy, held in Warsaw, in June, 1927 (The Journal, Aug. 13, 1927, p. 537), it was decided to establish an international bulletin, to be published, during the intervals between the congresses, in the *Archives médicales belges*, and to be printed, for the present, in French and English, with a view to keeping up connections. The bulletin will contain each month: 1. An original article dealing with military medicine and military pharmacy. During the interval between the congresses, each nation will furnish at least one of the articles. 2. A bibliographic index, containing titles or, possibly, brief abstracts, of articles with military significance

written by military physicians and pharmacists, provided such articles deal with military medicine and military pharmacy.

The editorial staff of the bulletin is composed of the permanent committee of the International Congress, to which national delegates will be added, one for each participating nation. The secretary of the permanent committee will serve as the editor-in-chief. The first number of the bulletin contains an article by Dr. Bainbridge of New York, member of the permanent committee of the Congress of Military Medicine and Military Pharmacy, on the world-wide significance of the congress.

Abnormal Types of Epidemic Encephalitis

Drs. Van Bogaert and Ley presented recently before the Société belge de neurologie a communication on the abnormal and obscure types of epidemic encephalitis of slow development. The differentiation of these slowly developing types of encephalitis from other infectious syndromes involving the cerebrospinal axis is often difficult. The distinction is especially difficult in case of an acute development of multiple sclerosis. Examination of the cerebrospinal fluid does not throw light on the matter; however, a study of the curve of colloidal benzoin appears promising, especially if a series of tests is carried out. It is negative in epidemic encephalitis. Experimental diagnosis by intracerebral inoculation of the cerebrospinal fluid or of brain substance taken aseptically may lead to erroneous conclusions. In certain instances, only the evolution of the syndrome reveals the avowed cases of multiple sclerosis. The authors emphasized the difficulty of differentiating these types from true epidemic encephalitis. They raised the question whether multiple sclerosis does not undergo a mutation similar to that of encephalitis, which seems to present varying aspects in different countries and following various epidemics.

BERLIN

(From Our Regular Correspondent)

Feb. 4, 1928.

Demographic Statistics for Germany

The average length of life, which in most European countries during the decade from 1871 to 1880 was only from 35 to 40, but by 1900 had already risen to 45, attained, in 1900-1911, in the German empire, 49 years. The rise still continues. Denmark has reported averages of 54.9 for men and 57.9 for women (1906-1910). The general mortality has fallen in all highly civilized countries. In Germany the total number of deaths dropped from 1,261,000 (30.6 per thousand) in 1872, with some fluctuations of the total, to 1,206,000 (22.5 per thousand) in 1897, and to 1,154,000 (18.1 per thousand) in 1909, the year in which, for the last time, more than two million births were recorded. In the last normal year before the World War (1913) the number of deaths had dropped to 1,061,000 (15.8 per thousand). In recent years the decline has continued. In 1923, 1924 and 1925 the total number of deaths was, respectively, 901,000 (14.6 per thousand), 802,000 (12.9 per thousand), and 788,000 (12.6 per thousand). The birth rates, however, tell a different story. The birth rate increased up to 1901, since which year there has been a decline. From 1872 to 1874 the total number of births ranged from 1,700,000 to 1,750,000, and from 1875 to 1890 the range was between 1,750,000 and 1,840,000. Between 1891 and 1897 it rose, with slight fluctuations, to 1,991,000. The decade from 1898 to 1909 showed the greatest annual totals of births; they run over two million. Since 1909 the figures have again slowly declined to 1,874,000 in 1914. The rates resulting from the unusual conditions associated with the war and postwar periods, with the marked fluctuations, may be passed over. The years 1923, 1924 and 1925 showed a more uniform picture, the total births in those years having been, respectively, 1,340,000, 1,314,000 and 1,335,000. If these figures are compared with those of the prewar period, it will be found that the total births have decreased abruptly, much more than the war losses in human life and the cession of the border territories in the East, West and North can justify. This is shown also by the comparative figures, which reveal a slow decline in the birth rate from 40 plus per thousand population up to 1879, to 38 per thousand in 1888 (38 was reached again in 1891 and 1893). In 1899 the rate fell to 37 and in 1902 to 36.2 per thousand. In 1906 a rate of 34 per thousand was attained for the last time; in 1908 the rate dropped to 33. Then the rate dropped abruptly to 27.6 during the second, the last normal, quarter in 1914. From 1923 to 1925 the figures are fairly uniform: 21.7, 21.1 and 21.3, respectively.

Certain regions of the *reich* present a much worse showing. The larger cities, for example, in spite of a high percentage of marriages, have only 14.2 living births per thousand of population; Berlin, indeed, has a birth rate of only 9.5. The rural sections are rapidly coming to follow the example of the larger cities and the upper classes. The number of marriages per thousand of population has not changed materially since the beginning of the seventies of last century up to the present. The figures of the war and postwar period are not considered; they must be excluded in all such observations. Not until 1923-1924, after the financial depression brought on by the decline of the mark had been partially overcome, do we get figures that are in any wise comparable with prewar figures. The proportion of marriages fluctuated, from 1874, the first normal year after the Franco-Prussian war, up to 1914, between 9.5 per thousand as the highest (1871) and 7.5 per thousand as the lowest figure (1879, 1880, 1881). During the remaining years of the period from 1874 to 1914 the figures ranged between these records. The first normal years after the war and the beginning of recovery from the financial crisis gave figures similar to those recorded for the prewar period: 9.4 per thousand for 1923, 7.1 per thousand for 1924, and 7.7 per thousand for 1925.

The excess of births over deaths has declined. In 1898 the excess of births over deaths for the German empire was 15.6 per thousand population (the highest figure); the average figure for the period 1871-1880 was 11.9; for 1881-1890, 11.7; for 1891-1900, 13.9, and for 1901-1910, 14.3. For 1913, the last normal year before the war, the excess of births over deaths was only 12.4 per thousand. After the war came a transient increase in the excess of births, which was observed everywhere. The excess of births over deaths in 1920 was 10.8, and in 1921 it rose even to 11.3. But even this peak of the postwar figures was under the figure for 1913. During the period from 1922 to 1925 the figures were fairly uniform, ranging around 8.1 per thousand, as follows: 8.5, 7.1 (height of the economic depression due to the decline of the mark), 8.2 and 8.7, respectively. The birth rate and the death rate are both declining, but the birth rate is declining more rapidly than the death rate.

Marriages

RICHARD S. GILL, West Palm Beach, Fla., to Miss Ruth Bowden of Midland, Ga., at Stuart, Fla., Dec. 12, 1927.

JOSEPH BOSTICK LISTON to Miss Hazel Marion Smalley, both of Carlinville, Ill., January 14.

WILLIAM HENRY KRAEMER to Miss Caroline Robelen, both of Wilmington, Del., January 3.

WILLIAM E. BROWNING to Miss Selma Kittleson, both of Cledonia, Minn., in January.

BENJAMIN B. MORROW to Miss Rhoda M. Welding, both of Spiceland, Ind., February 19.

GEORGE L. RICHARDS, Fall River, Mass., to Miss Christine M. MacLean, February 7.

Deaths

Samuel Alexander Matthews, Chicago; University of Michigan Medical School, Ann Arbor, 1895; professor and head of the department of physiology, pharmacology and therapeutics, Loyola University School of Medicine; formerly assistant in pharmacology at his alma mater; assistant professor of experimental therapeutics, Rush Medical College; professor of physiology and experimental pharmacology, University of Kansas School of Medicine, Kansas City, and professor of physiology and experimental pharmacology, University of Alabama School of Medicine, Tuscaloosa; aged 63; died, February 19, at the Mercy Hospital, of angina pectoris and myocarditis.

Galen Murray Woodcock ✠ Bangor, Maine; Medical Department of the University of the City of New York, 1873; past president of the Maine Medical Association and the Penobscot County Medical Society; at one time member and president of the state board of registration in medicine; for many years member and formerly president of the state board of health; on the staff of the Eastern Maine General Hospital; aged 75; died, February 17, of angina pectoris.

Willis Allen McConkie, Cedar Rapids, Iowa; University of Michigan Medical School, Ann Arbor, 1889; member of the Iowa State Medical Society; formerly on the staff of St. Luke's Methodist Hospital; aged 62; died, February 16, at Covington, of fracture of the cervical vertebra, received in falling off a wall while going to see a patient.

Charles Emory Pierce, Nashville, Tenn.; University of Louisville (Ky.) School of Medicine, 1911; member of the Missouri State Medical Association; on the staff of the Central State Hospital; aged 52; died, January 31, at the Vanderbilt Hospital, of complications following influenza.

Joseph A. Purtell ✠ Milwaukee; Rush Medical College, Chicago, 1899; associate clinical professor of medicine, Marquette University School of Medicine; formerly professor of medicine, Milwaukee Medical College; aged 54; died, February 6, at the Misericordia Hospital, of pneumonia.

William James Hurley ✠ Chicago; Chicago College of Medicine and Surgery, 1908; formerly professor of surgery and clinical surgery at his alma mater; for many years on the staff of St. Bernard's Hospital; aged 45; died, February 13, of chronic nephritis and myocarditis.

Henry H. Everett ✠ Chicago; University of Illinois College of Medicine, Chicago, 1902; instructor in laryngology and otology, Rush Medical College; formerly on the staff of the Presbyterian Hospital where he died, February 17, of arteriosclerosis and nephritis, aged 61.

Joseph Parker Baker ✠ Findlay, Ohio; Starling Medical College, Columbus, 1890; formerly on the staff of the Home and Hospital of the City of Findlay; aged 63; died, February 14, of pulmonary edema, following metastatic carcinoma of the lungs.

Augustine Alvin Mann, Central Falls, R. I.; Jefferson Medical College of Philadelphia, 1860; member of the Rhode Island Medical Society; Civil War veteran; for eighteen years member of the city council; aged 90; died, February 11, of myocarditis.

Ptolemy O'Meara Edson, Boston; University of Vermont College of Medicine, Burlington, 1860; member of the Massachusetts Medical Society; Civil War veteran; for five years member of the school board; aged 94; died, February 13, of pneumonia.

Pinckney D. Shriner ✠ Columbus, Ohio; Starling Medical College, Columbus, 1891; formerly president of the school board and city board of health; aged 58; died, February 18, at the Mercy Hospital, of myocarditis and chronic interstitial nephritis.

Norman Francis Dorn, Los Angeles; Medical Department of the University of Southern California, Los Angeles, 1916; police surgeon; served during the World War; aged 35; died, January 31, at the Chase Sanitarium, of bronchopneumonia.

William A. Shufelt ✠ New York; McGill University Faculty of Medicine, Montreal, Que., Canada, 1881; on the staff of the Reconstruction Hospital, where he died, January 27, aged 70, of carcinoma of the bladder and bronchopneumonia.

Jonathan B. Carlile, Eldorado, Kan.; Missouri Medical College, St. Louis, 1836; Civil War veteran; for many years a member of the state board of health; aged 83; died, in January, at Leavenworth, of pneumonia.

Clarice Johnston Parsons, Springfield, Mass.; New York Medical College and Hospital for Women, 1894; on the staff of the Wesson Maternity Hospital; aged 62; died, February 15, of carcinoma of the uterus.

Eugene Larue Vansant ✠ Philadelphia; Jefferson Medical College of Philadelphia, 1884; member of the American Laryngological, Rhinological and Otological Society; aged 69; died, February 15, of heart disease.

Frank McDowell Judson, Lyn, Ont., Canada; University of Toronto Faculty of Medicine, 1923; member of the Associated Anesthetists of the United States and Canada; aged 34; died, Nov. 13, 1927, at Brockville.

Charles Livingston Squire, Elmira, N. Y.; Medical Department of Columbia College, New York, 1874; member of the Medical Society of the State of New York; aged 75; died, February 9, of septic arthritis.

John William MacKenzie, Big Sandy, Mont.; Medical College of Indiana, Indianapolis, 1900; aged 47; died, February 7, at the Montana Deaconess Hospital, Great Falls, following an operation for appendicitis.

Joseph Poposkey, Grand Rapids, Mich.; College of Physicians and Surgeons, Chicago, 1891; for four years a member of the city board of health; aged 64; died, February 3, of cerebral arteriosclerosis.

Henry S. Maloy, Milan, Ga.; Atlanta Medical College, 1895; member of the Medical Association of Georgia; aged 62; died, Nov. 6, 1927, of acute dilatation of the heart and cerebral hemorrhage.

John Tracy Edson, Staten Island, N. Y.; Medical Department of Columbia College, New York, 1880; veteran of the Spanish-American War; aged 78; died, February 2, of cerebral hemorrhage.

Alfred N. Frame, Parkersburg, W. Va.; Indiana Medical College, Indianapolis, 1878; member of the West Virginia State Medical Association; aged 75; died, January 4, of angina pectoris.

Steuben Douglas Angle, Portland, Pa.; Northwestern Medical College, St. Joseph, Mo., 1886; aged 76; was found dead, recently, of heart disease and suffocation, brought about by an oil stove.

Claude Fenton Osborne, Hampton, Iowa; University of Illinois College of Medicine, Chicago, 1900; member of the Iowa State Medical Society; aged 50; died, February 5, of heart disease.

Joseph H. Ringer, Jeannette, Pa.; University of Pittsburgh School of Medicine, 1888; member of the Medical Society of the State of Pennsylvania; aged 74; died, Nov. 29, 1927, of myocarditis.

T. F. Stevenson, Hickory, N. C.; Louisville (Ky.) Medical College, 1893; member of the Medical Association of the State of North Carolina; aged 59; died, January 31, of angina pectoris.

Walter Prevost Glendon ✠ Bridgeton, N. J.; Jefferson Medical College of Philadelphia, 1886; on the staff of the Bridgeton Hospital, where he died, February 14, of sinusitis, aged 62.

Samuel Mathers Barnes, Los Angeles; State University of Iowa College of Medicine, Iowa City, 1872; aged 81; died, in February, of chronic myocarditis, nephritis and asthma.

John Edward Beale ✠ Lemoyne, Pa.; Medico-Chirurgical College of Philadelphia, 1907; aged 51; died, January 23, at the Harrisburg (Pa.) Hospital, of carcinoma of the stomach.

Anna D. Gloss, Peking, China; Northwestern University Woman's Medical School, Chicago, 1885; medical missionary in China; aged 66; died, February 23, at Pasadena, Calif.

Willard M. Burleson, Grand Rapids, Mich.; Saginaw Valley Medical College, 1899; aged 59; died suddenly, February 13, of acute dilatation of the heart and chronic myocarditis.

Thomas N. Rogers, Monrovia, Calif.; Victoria University Medical Department, Toronto, Ont., Canada, 1889; aged 67; died, Oct. 2, 1927, at Los Angeles, of angina pectoris.

Willis C. Kinner ✠ Columbus, Ohio; Medical College of Ohio, Cincinnati, 1900; aged 53; died, February 14, at the Mount Carmel Hospital, of carcinoma of the kidney.

Claude A. Smith ✠ Pittsburg, Kan.; Barnes Medical College, St. Louis, 1899; on the staff of the Mount Carmel Hospital; aged 58; died, February 1, of angina pectoris.

Tom V. Williams ✠ New Castle, Pa.; College of Physicians and Surgeons, Baltimore, 1892; member of the American Roentgen Ray Society; aged 65; died, Dec. 21, 1927.

Thomas T. McNish, New Brighton, Pa.; Homeopathic Hospital College, Cleveland, 1885; Civil War veteran; aged 78; died, February 1, of a self-inflicted bullet wound.

Benjamin Chapman Goodwin, Buckner, Va.; Medical College of Virginia, Richmond, 1865; aged 85; died, January 18, of pneumonia, following a cerebral hemorrhage.

Anthony Rud ⊕ Chicago; Chicago Medical College, 1891; on the staff of the West Suburban Hospital; aged 65; died, February 23, at Orlando, Fla., of myocarditis.

German **Baxter Miller,** Lexington, Ky.; College of Physicians and Surgeons, Baltimore, 1882; aged 75; died, January 20, at the Stokes Sanitarium, Louisville.

Alexander P. Waterfield, Union City, Tenn.; University of Nashville Medical Department, 1858; Civil War veteran; aged 93; died, February 7, of heart disease.

DeWitt **Talmadge Byrom,** El Paso, Texas; Tulane University of Louisiana School of Medicine, New Orleans, 1922; aged 31; died, Nov. 4, 1927, of tuberculosis.

Carl W. Rutledge ⊕ Indianapolis; Medical College of Indiana, Indianapolis, 1903; aged 48; died, February 17, at St. Vincent's Hospital, of pneumonia .

Joseph **Bird Fitzpatrick,** Killeen, Texas; University of Louisville (Ky.) School of Medicine, 1881; aged 67; died, Dec. 19, 1927, of cerebral hemorrhage.

Edward Francis Duggan ⊕ Valley Stream, N. Y.; Long Island College Hospital, Brooklyn, 1893; aged 61; died suddenly, February 16, of heart disease.

William H. Renois, East St. Louis, Ill.; University of Vermont College of Medicine, Burlington, 1866; aged 83; died, January 31, at St. Mary's Hospital.

Edward Everett Mackenzie, Baltimore; University of Maryland School of Medicine, Baltimore, 1884; aged 70; died, February 11, of angina pectoris.

William B. McCoy, Coffey, Mo.; Starling Medical College, Columbus, Ohio, 1897; aged 71; died, January 16, at Laclede, of chronic interstitial nephritis.

Edgar Clement ⊕ Haddonfield, N. J.; Hahnemann Medical College and Hospital of Philadelphia, 1898; aged 61; died, February 13, of myocarditis.

William E. Woodrow, Monticello, Ky.; Hospital College of Medicine, Louisville, 1898; aged 60; died, in January, at Louisville, of heart disease.

Albert Ross Burgess ⊕ Wichita, Kan.; University of Illinois College of Medicine, Chicago, 1905; aged 48; died, January 30, in a local hospital.

Charles Lewis Finley, Caldwell, Ohio; Hospital College of Medicine, Louisville, 1907; aged 43; died, February 15, of carcinoma of the throat.

Everett Lewis Emmons ⊕ Detroit; Detroit College of Medicine and Surgery, 1893; aged 58; died, February 24, of cerebral hemorrhage.

Frederick Colton Hood, Toronto, Ont., Canada; Trinity Medical College, Toronto, 1885; L.R.C.P., London, England, 1886; died, Nov. 15, 1927.

Henri Albert Blagdon, Montreal, Que., Canada; Laval University Faculty of Medicine, Quebec, 1913; aged 40; died suddenly, Nov. 18, 1927.

Algernon Eugene Bennett, Westerville, Ohio; Eclectic Medical Institute, Cincinnati, 1899; aged 71; died, February 17, of paralysis.

William Francis Fairchild, Flora, Ill.; Louisville (Ky.) Medical College, 1890; aged 65; died suddenly, February 3, of heart disease.

David K. Allinder, Atascadero, Calif.; University of Maryland School of Medicine, Baltimore, 1880; aged 82; died, January 21.

Arthur C. Lee, Detroit; Detroit College of Medicine and Surgery, 1893; aged 59; died suddenly, February 6, of heart disease.

J. Horace Chartier, Montreal, Que., Canada; University of Montreal Faculty of Medicine, 1888; aged 63; died, Dec. 5, 1927.

Marion Brown Lodeman, Ludlowville, N. Y. (nongraduate); aged 72; died, Nov. 17, 1927, of cerebral hemorrhage.

Alexander Campbell, St. Vincent, Minn.; Eclectic Medical Institute, Cincinnati, 1881; aged 88; died, January 17.

William C. Wolf, Colorado Springs, Colo.; Chicago Medical College, 1879; aged 74; died, January 25, of meningitis.

Bureau of Investigation

THE VIT-O-NET QUACKERY

Making a "Cure-All" of an Electric Heating Pad

Credulity moves in waves and quackery rides on the crest of the wave. The 1927-1928 brand of medical humbug is Magnetism with a capital "M." The vogue was probably started by the arch quack of the century, Albert Abrams, who conducted his scheme through low-grade physicians and osteopaths. Gaylord Wilshire worked the other side of the street—the public. With his magic horse collar, I-On-A-Co, Wilshire persuaded the gullible to pay over $50 for $4 worth of electric bell wire purchased in the belief that it would magnetize the iron in the blood! Wilshire's previous experience as a high-pressure salesman in the real estate and gold-mine-stock industries made him irresistible as a plausible quack and his business flourished exceedingly. In the nature of the case, imitators arose, and a dozen or more magic horse collars, under as many names, are bidding for the easy money of those who seek health via the magnetic route.

A concern known as the Vit-O-Net Corporation (previously the Vit-O-Net Manufacturing Company), and having headquarters in Chicago, puts out a large sized electric heating pad or blanket. It sells for $102.50. As an expensive means of applying heat conveniently and continuously, the "Vit-O-Net" may have a place in the cosmic scheme. The concern that exploits it evidently realizes that for one person that would buy its device as a heating pad, there are fifty who will buy it as a cure for whatever ails them. This, probably, is the explanation of the Vit-O-Net concern's selling its heating pad as a "patent medicine."

A few weeks ago a large display advertisement was published, signed by the president of the William H. Rankin Company, an advertising agency. The advertisement had for its heading, in large black-faced type: "Are you the Man for this Exceptional Opportunity?" and the opening paragraph of the advertisement read:

> "There is about to be placed on the market in a large way the GREATEST DISCOVERY in the rapidly growing field of ELECTRO-MAGNETIC-THERAPY. Over fifteen years of constant effort has been devoted to perfecting this device, and *results attained from its use in thousands of cases have been so astounding as to be almost unbelievable.*"

The advertisement stated, further, that to men "with outstanding personality, energy, education, executive and selling experience" the concern that had this great discovery in electro-magnetic therapy offered a lifetime connection that would positively lead to complete financial independence. Those who answered the Rankin advertisement received a letter from the Vit-O-Net concern stating that the William H. Rankin Company had referred the inquiry to it. The inquirers were told to fill in a rather elaborate application blank and mail it to the Vit-O-Net concern by special delivery, and they would be notified whether the Vit-O-Net concern wished them to report for attendance at the "sales-school."

A little ancient history regarding the Vit-O-Net concern is of interest. During 1922, the Vit-O-Net Manufacturing Company carried conservative advertisements of their electric heating pad in THE JOURNAL. Early in 1923 the company ceased advertising in THE JOURNAL because they failed to get the returns they had anticipated.

In April, 1923, the Vit-O-Net concern was advertising that the "Mayo Brothers' Colonial Hospital" at Rochester, Minnesota, was using seven blankets. Investigation brought out the fact that the Mayo Brothers did not operate in the Colonial Hospital, had no stock or interest in it in any way, shape or manner, and that the use of their names was entirely unauthorized. The Colonial Hospital is owned by the Kahler Corporation, which, when the matter was brought to its attention, immediately notified the Vit-O-Net Corporation, under date of May 4, 1923, that all advertising matter of the Vit-O-Net concern in which the name of the Colonial Hospital was used must be discontinued at once, and that the name was not to be used in any of the Vit-O-Net advertising matter hereafter. This was in 1923. Today—March,

1928—the Vit-O-Net concern is using as part of its "come-on" literature, a photographic reproduction of a letter on the stationery of the Colonial Hospital, signed "Glenn Phelps, Manager," and dated May 6, 1924, stating that the Colonial Hospital is using several of the Vit-O-Net blankets. Mr. Phelps' letter was addressed to *Hospital Management* of Chicago, a publication which, apparently, has worked rather closely with the Vit-O-Net concern, as a number of the pieces of Vit-O-Net advertising consist of reproductions of letters sent to *Hospital Management*, in answer to an inquiry from that publication regarding this electric heating pad.

It is but fair to state that the letter from the Colonial Hospital was entirely noncommittal and to the effect, only, that the hospital used these heating pads and found them satisfactory. In addition, the Vit-O-Net agents, are again peddling the falsehood—verbally—that "the Mayo Bros." are

A Message of HOPE for the Sick

GET THIS FREE BOOK, "Awake the Greater Health Within You"... *We believe it tells of the greatest discovery in the great field of electro-therapeutics—but don't take our word for it*—PROVE IT YOURSELF

AWAKE the Greater Health Within You"—a bugle call to health, achievement, success! Gives the very basic formula for HEALTH.

Thousands toil wearily through life, handicapped by chronic ailments. Low vitality! Energy gone! Outlook gloomy! Ambition lost!

WHY?

Simply because in this day of high-pressure living, Nature's way of energizing the body fails behind. Waste exceeds repair. Poisons accumulate. Nature cries out for help.

Science Discovers the Needed Power

Now thousands know how to give their vital organs and tissues this assistance. They have adopted a remarkable method that literally clears poisons from the system, brings new life, health, ambition, happiness, adds years to life, makes normal weight a reality, helps prolong beauty of youth.

This aid, already *used by over 1,500 physicians and hospitals*, consists of the Vit-O-Net Electro-Magnetic Blanket. Tests prove that the quantity of poisons eliminated as a result of Vit-O-Net treatments is many times greater than is possible by any other method.

What Vit-O-Net Does

You feel the thrill of vigorous new health. Your muscles leap to new vitality. You are refreshed, invigorated, keenly alive—in body and mind. These are the results of Vit-O-Net treatments.

In a unique way, Vit-O-Net combines diathermic (electronic) by sweating) with magnetic stimulation—two wonderful agents of health and vigor. You merely wrap yourself in it. You rest in a pleasing warmth only two degrees above body temperature. Soothing! Delightful! Perfectly safe!

Vit-O-Net charges your blood stream with electro-magnetic energy. Circulation increases. Corpuscles responsible for ailments fairly swim away. Poisons go out—HEALTH comes in. Vit-O-Net method of maintaining health is safe, sound, sure.

A VIT-O-NET OFFICE NEAR YOU!

VIT-O-NET CHICAGO CO.
200 W. WASHINGTON ST., CHICAGO

VIT-O-NET
ELECTRO-MAGNETIC
BLANKET

TO PROVE What We Say—A FREE Treatment in Your Home

INVITATION TO PHYSICIANS

FREE BOOK
MAIL THIS!

Miniature reproduction of a five-column display advertisement of Vit-O-Net that appeared in the Chicago Herald and Examiner, Feb. 20, 1928.

using their device. Letters from such widely separated places as Riverside, Calif., and St. Louis, Mo., report that this claim is being made.

As part of its present advertising campaign, the Vit-O-Net concern is using photographic reproductions of letters from various other hospitals. None of these letters from reputable institutions even remotely suggest that the Vit-O-Net device has any magnetic or electric qualities. The letters are used, however, to give an air of respectability to what might otherwise be considered a discreditable piece of quackery. Some hospitals from which these letters came, and the persons signing the letters, follow:

MILWAUKEE (WIS.) JOHNSTON EMERGENCY HOSPITAL, by E. B. Callender, R. N.
MARY'S HELP HOSPITAL (San Francisco), by Sister Zoe.
JEWISH MATERNITY HOSPITAL (New York City), unsigned.
WOMAN'S HOSPITAL (New York City), by James U. Norris, Superintendent.
COLUMBUS (OHIO) RADIUM HOSPITAL, by Frances Berhurst, Superintendent.
JAMESTOWN (N. Y.) GENERAL HOSPITAL, by M. Robertson, Superintendent.
MICHAEL REESE HOSPITAL (Chicago), by Dora C. Saunby, R.N.
MATERNITY HOSPITAL (Cleveland), by Calvin MacDonald.

These are but a few of the hospitals whose noncommittal letters are being used as an asset to quackery in the exploitation of Vit-O-Net. In addition, the concern is also using photostatic copies of letters that have been addressed either to the William H. Rankin Company or to the "Good Health Research Department" of that company, by a motley array of chiropractors and osteopaths. The concern even goes so far as to reproduce photographically an order from the Rockefeller Institute for Medical Research, dated November 6, 1924. This order called for one electrical blanket purchased from the Vit-O-Net Manufacturing Company.

One of the Vit-O-Net booklets is of the usual testimonial type. It contains a two-page statement, entitled, "Experiences with the Vit-O-Net System of Treatment," which is credited to "Dr. Ralph Shadduck." Shadduck, according to commercial reports, has for some time been connected with the company as an officer or an employee. A careful search fails to show that Shadduck was ever graduated by any reputable medical school or is licensed to practice medicine in any state in the Union.

Another article in the same booklet is credited to "Dr. Otis J. Briggs" and deals with the "Therapeutic Value of Vit-O-Net." Otis J. Briggs was "dean" of the fake concern known as the "College of Drugless Physicians" of Indianapolis. In June, 1927, Briggs was arrested on a charge of conspiracy to commit a felony in connection with the issuance of fraudulent diplomas, and was reported to have confessed that he had issued a number of fraudulent diplomas for "Doctors of Naturopathy." In issuing these fake diplomas, Briggs dated them back, so that the purchasers thereof might be licensed without examination. Briggs is not a physician but a chiropractor and the founder and president of the "American Drugless Association"; he seems to have been connected with various fakish schemes.

From the testimonials and claims made by the exploiters it appears that the Vit-O-Net blanket cures cancer, arthritis, Bright's disease, eczema, neuritis, paralysis, anemia, low blood pressure, high blood pressure, goiter, epilepsy, asthma, prostatic trouble, deafness, and various other conditions. In a Vit-O-Net booklet, "The Power of Electro-Magnetism," being distributed a few weeks ago, we read:

"It remained for the Vit-o-Net Mfg. Co. to concentrate these magnetic waves in the Vit-O-Net Electro-Magnetic Blanket, so that such energy will enter the human body, magnetize the elements in the blood and tissues. A vibratory action is produced in the deepest organs, stirring every cell into activity, increasing metabolism, and hastening the elimination of waste products."

That the Vit-O-Net blanket will magnetize the elements in the blood and tissues is, of course, a fantastic conception. Equally ridiculous is the claim that it produces a vibratory action in the "deepest organs."

"When a human body is enveloped in the Vit-O-Net Electro-Magnetic Blanket, a gentle vibratory action takes place throughout the system. Every cell is stimulated by these magnetic waves, resting tired nerves, repairing broken down tissue and eliminating toxins through the pores and other waste channels."

Here, again, are falsehoods. The Vit-O-Net produces no vibratory action through the system and the cells are not stimulated by magnetic waves.

"Obesity has been reduced from 2 to 5 lbs. per day. Because the treatment is natural and stimulating, no weakening effects follow. Vit-O-Net dissolves unnecessary fat only—it does not reduce the person of normal weight or underweight. On the contrary, because it enables the cells to take on nourishment, it will assist one underweight to return to normal."

Truly a marvel of discrimination! If you are too fat, the Vit-O-Net blanket, in some esoteric way, "dissolves" your unnecessary fat; if you are too thin, the same blanket, by means equally occult, causes you to take on weight!

"At the suggestion of a noted San Francisco scientist, the Vit-O-Net Electro-Magnetic Blanket was thoroughly tested by the E. R. A. system which is recognized by thousands of physicians. These tests showed startling evidence of a definite radio emanation of energy from the blanket."

Here is a definite hook-up between this heating pad and the preposterous hokum of Albert Abrams. From the para-

graph just quoted, it is noted that, in addition to the blanket's alleged vibratory and magnetic virtues and its power to take off or put on fat, it also has a "radio emanation"!

"When you are wrapped in the Blanket, your body with the exception of the head, is entirely surrounded by a current of electricity. You are in a magnetic field (Faraday's law). With 15,000 feet of magnet wire contained in the Vit-O-Net, considerable magnetism is generated. The metallic salts in the blood being an excellent conductor, the entire blood stream, *a moving body*, becomes charged with magnetic energy."

Here is a crude twisting of facts and fiction. It is true that, when one is wrapped in a Vit-O-Net blanket that is plugged into an electric light socket, the body is surrounded by a current of electricity. It is equally true that one is in a magnetic field. This may impress the ignorant but it doesn't mean anything. One may also be entirely surrounded by a current of electricity when he rides in the lowly street car, and every one on this terrestrial globe is constantly immersed in a magnetic field, owing to the magnetism of the earth. That the "metallic salts in the blood" become charged with magnetic energy is plain buncombe.

Summed up, it can be said that the Vit-O-Net blanket is a convenient and expensive way of applying continuous heat to the body. Further than this one cannot truthfully go. The curative value of the Vit-O-Net blanket is that of heat which differs not at all from that developed from a hot water bottle or of a hot brick wrapped in a sock!

Correspondence

MEASLES

To the Editor:—In the editorial on measles (THE JOURNAL, February 18) it stated that "many well qualified investigators have failed to obtain positive blood cultures [of the green producing coccus as described by Ruth Tunnicliff] in early measles cases." In view of this statement it should be noted that Duval and Hibbard (Hibbard, R. J., and Duval, C. W.: Studies upon the Virus of Measles, *Proc. Soc. Exper. Biol. & Med.* **23**:853, 1926. Duval, C. W., and Hibbard, R. J.: Further Studies upon the Etiology of Measles, ibid. **24**:519, 1927) isolated in cultures from the blood, unfiltered as well as filtered, of all of six patients in the active eruptive stage of measles a coccus in every way similar to the one obtained by Tunnicliff. Small amounts of the cultures of this coccus were injected intravenously in rabbits which developed typical "pyrexial and leukocytic reactions" after an incubation of from five to twelve days. Filtrates of cultures of the coccus failed to produce any such reactions. In other words, Duval and Hibbard's results are directly confirmatory of the results obtained by Tunnicliff.

LUDVIG HEKTOEN, M.D., Chicago.

VASECTOMY FOR THE PREVENTION OF OPERATIVE EPIDIDYMITIS

To the Editor:—This measure has attained general approval as a preliminary to prostatectomy; its success proves the assumption that such infection of the epididymis is an extension from a prior infection of the corresponding seminal vesicle. Now this vesiculitis is of course not abolished by occlusion of the vas; its persistence may cause frequent and painful urination—a veritable "prostatisme sans prostate"; and such toxemia as has at times compelled urologists, e. g., Thomson-Walker—to remove the vesicles subsequent to prostatectomy. Such toxemia may be an unrecognized factor in some operative deaths.

Now the minor operative procedure necessary to occlude the vas, whether vasectomy or vas ligation, permits the injection of mercurochrome or other solution through the vas into the vesicles. Here it remains for days, being gradually pumped into the prostatic urethra and bladder, as the coloring of the urine shows. This measure goes far toward averting not only epididymitis but vesiculitis as well; or, if the latter already exists, toward abolishing the infection in the vesicle. This filling of the vesicle adds nothing objectionable to vasectomy but protects the patient from vesiculitis, which is potentially more dangerous than epididymitis. Its value, demonstrated by urologists, warrants its consideration by surgeons.

WILLIAM T. BELFIELD, M.D., Chicago.

USE OF VENOUS SPACES OF PENIS FOR TRANSFUSION

To the Editor:—The article by Dr. E. K. Shaw on the use of the venous spaces of the penis for transfusion (THE JOURNAL, February 11) was read with interest.

During the winter of 1918-1919 at the Camp Grant Illinois Base Hospital, in the great campaign of purification of a large fraction of the colored contingent of the army before its return to the quiet pursuits of civilian existence, we came across one large soldier who apparently had no superficial veins according to the examination of several officers. The writer, then a first lieutenant in the medical corps, suggested to his captain, Oscar W. King, now of around Houston, that we "shoot" this particular darky through the dorsal vein of the penis. In the presence of a large gallery of willing corps boys and sympathetic patients, the operation was successfully performed by the captain.

The news spread through the lower reaches of the camp like wildfire. On the next day and ever after, our patients were exceptionally well behaved.

GEORGE H. STACY, M.D., Peoria, Ill.
Major, M. C., U. S. Army.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

EPINEPHRINE AND EPHEDRINE IN RELATION TO BLOOD PRESSURE AND PERTUSSIS

To the Editor:—Is the action of epinephrine hydrochloride on the cardiovascular system similar to the action of ephedrine sulphate; namely, that both stimulate the heart muscle to contract and that both stimulate the arterial musculature to contract, thereby raising the blood pressure? What are the contraindications of ephedrine sulphate? Can it be used to relax the diaphragm in spasms of whooping cough?

J. RALPH DECESARE, M.D., Brooklyn.

ANSWER.—The action of ephedrine on the circulation is different from that of epinephrine. While the latter is a powerful heart stimulant, ephedrine is a direct depressant to the heart, though this effect is generally not evident in individuals with normal circulation, excepting after large doses. A heart that has been depressed by continued low blood pressure is so sensitive to the depressant action of ephedrine that the poor condition of the circulation may be aggravated by it. It is also much feebler as a vasoconstrictor than is epinephrine. Hence, as a circulatory stimulant, ephedrine has been a disappointment. Indeed, profound circulatory depression should be considered as one of the contraindications to this drug. Its tendency to produce insomnia, at times, might contraindicate administration at bedtime, especially in those subject to sleeplessness. A dose of a hypnotic will, however, overcome this objection. It may produce or aggravate cardiac palpitation, tremor, headache, sweating and nausea. It has a tendency to produce albuminuria, as a result, it is believed, of vasoconstriction rather than direct injury to the kidney tissue. Irritability of the urinary bladder is liable to be caused by it, especially in patients with an hypertrophied prostate. Simultaneous administration of atropine may overcome many of these undesirable results. Hence these conditions are relative rather than absolute contraindications to ephedrine.

W. D. Anderson and C. E. Homan, Jr., reported some success in the treatment of whooping cough with ephedrine hydrochloride (*Am. J. M. Sc.* **174**:738 [Dec.] 1927).

OPERATION ON DEVIATED NASAL SEPTUM

To the Editor:—After total removal of the septum for badly deviated septum, what is the effect on breathing, aeration of the lungs, structure and anatomy of the nose? Are there any serious effects? Please omit name.

M.D., Ohio.

ANSWER.—Despite the most careful operation, septal resection often results in a perforation. If the opening is small, a disagreeable whistling often occurs which annoys the patient. Another disadvantage of the perforation is the fact that crusting is likely to ensue on the edges of the wound, causing considerable obstruction to breathing, and when the crusts are removed, bleeding sometimes occurs. The late Professor Fein of Vienna suggested many years ago that it would be just as well to remove a large portion of the septum, as it is well known that a large opening does not have the disadvantage of either the crusting or the whistling. As to the effect on the breathing and the aeration of the lungs, it is not likely that the removal of a large portion of the septum will produce undesirable results. However, when a complete septal resection is done, sufficient cartilage must be left anteriorly to support the tip of the nose. Otherwise external deformity may result.

CHEMICALS USED IN WATER SOFTENERS

To the Editor:—Kindly inform me what chemical is used in the water softeners now in general use, such as the "Duro," and one also sold by Crane & Company. Does this water have any deleterious effect on the system?

JOHN C. FARRELL, M.D., Arlington, Minn.

ANSWER.—The water softeners referred to operate, according to our understanding, through the use of a zeolite, or on what is chemically termed the "exchange silicate" idea. The effect of such softening is the almost complete removal of the calcium and magnesium constituents of the water, regardless of the form in which it exists in the original water, and in their place is left a similar sodium salt. From the standpoint of domestic use, such treatment makes the water soft and not particularly objectionable save from a possible corrosive tendency which is somewhat increased.

INCOMPATIBILITY IN PRESCRIPTION

To the Editor:—I am in the habit of prescribing the following formula:

	Gm. or Cc.
Sodium bicarbonate	6
Syrup of Rhubarb, Aromatic F. E. Cascara Sagrada, Aromatic	āā 50

I inadvertently omitted "aromatic" from the cascara on the prescription, and the pharmacist tells me that effervescence took place violently. Can you explain the incompatibility? The original prescription does not effervesce. Please omit name.

M.D., Wisconsin.

ANSWER.—The A. M. A. Chemical Laboratory reports that the fluidextract of cascara sagrada U. S. P. X. contains soluble acid resins; as would be expected, this solution when added to sodium bicarbonate effervesces. In case of aromatic fluidextract of cascara sagrada U. S. P., the resins have been previously neutralized with calcium oxide and magnesium oxide; the object of the latter is to destroy the bitter taste (incidentally, the aromatic form is much less effective). Using the aromatic fluidextract, there is, therefore, no reaction with sodium bicarbonate.

RELATIVE SAFETY OF SEDATIVE DRUGS

To the Editor:—Could you tell me the relative safety of sulphonal, trional, luminal, veronal and allonal? These drugs are used by various men, and I should like to know what you consider the best one to give as a hypnotic. I would appreciate any information regarding their toxicity. Please omit name.

M.D., St. Paul, Minn.

ANSWER.—Sulphonmethane (sulphonal) and sulphonethylmethane (trional) have to a large extent been superseded by phenobarbital (luminal) and barbital (veronal), especially because the sulphonmethanes are apt to make the patient drowsy the day after the ingestion, and are liable to produce an alteration in the blood which manifests itself by hematoporphyrinuria, a condition in which dark red or almost black urine is passed. For these reasons it was not considered wise to use these substances for more than a few days at a time.

Barbital is a relatively safe but feeble hypnotic which may be preferred to all others when a mild effect suffices, as in nervous insomnia.

Phenobarbital is a much more potent drug. It is one of the most reliable and powerful hypnotics and is safe when given in a dose of from 0.1 to 0.2 Gm., which may be considered an ordinarily maximum dose. It is contraindicated in the presence of marked asthenia, no matter what its cause, as well as in nephritis.

Allonal is a mixture of a barbituric acid derivative similar to barbital and of amidopyrine; the latter increases the analgesic tendency of the former, so that it is more likely to produce sleep in the presence of pain than hypnotics alone.

BASE FOR OINTMENTS

To the Editor:—Would you kindly publish a formula for base in the mixing of ointments which is nongreasy and highly penetrating? I should like a nonirritating, greaseless, penetrating and quickly absorbed base for ointments. Please omit name.

M.D., Lynn, Mass.

ANSWER.—There is no such formula as the one desired. Unfortunately, the specifications are mutually exclusive. Only fats or fat solvents penetrate the skin; and, as all fat solvents are irritating, these would be excluded from consideration. Thus, a well made rose water ointment (cold cream) of official type is about as penetrating and nonirritative a preparation as may be designed. The so-called greaseless cold creams, on the other hand, are in reality nothing but stearate soaps and, like all soaps, are somewhat irritative. Still, a so-called vanishing cream may most nearly fill the requirements. Such a preparation may be made according to the following formula:

	Gm. or Cc.
Stearic acid	50.0
Oleic acid	10.0
Potassium hydroxide	2.5
Distilled water	200.0

Perfume, as desired, 1 cc. (more or less)

Melt the stearic acid in a dish on a water bath, heated to a temperature of 85 C. Dissolve the alkali in the water, warm the solution to 85 C. and gradually pour the warm solution into the melted acid, stirring briskly. Continue the same temperature and active stirring for ten minutes to insure a complete saponification and absence of free alkali. Then remove the heat but continue stirring until cold, at the same time incorporating the perfume. The cream should afterward be beaten for several hours, preferably by mechanical means, and then placed in jars or tubes.

EPONYMS IN CARDIOLOGY

To the Editor:—In following the study of the cardiograms, names and terms are applied which, as a general rule, are somewhat unfamiliar even to many of the teachers of heart diseases, as, for example: 1. The structural mass of neuromuscular tissue between the right auricle and the superior vena cava is known as the sino-auricular node. Why is this called the Keith-Flack node? Who were these investigators and where did they operate? 2. The specialized bundle or nerve tissue emanating from this node and extending over both right and left septums of the heart is described as the A-V or auriculoventricular node or bundle of His. Who was His and where and at what time did he demonstrate the presence of this bundle of nerve fibers in the heart? 3. This bundle of His proceeds as right and left strands and divides into a syncytial network or arborization (branching like a tree) over both the right and left ventricles and is described as the Purkinje fibers. Again who was or who is Purkinje? Where is he doing this investigation? At what school or university?

M.D., Chicago.

ANSWER.—The use of personal names to indicate anatomic structures or diseases is confusing and rarely justifiable. It is interesting that Keith and Flack should state in one of the articles in question: "We believe that neither the bundle nor any other structure in the human body requires a personal name for its proper designation."

1. Arthur Keith, at that time lecturer in anatomy at the London Hospital Medical College, and Martin Flack, at the same time assistant demonstrator in physiology at the same institution, described in the *Journal of Anatomy and Physiology* in 1907 the node at the junction of the superior vena cava and the right auricle which bears their name.

2. The history of the auriculoventricular node and bundle really begins in 1883 with Gaskell, who showed that the impulses passed to the ventricle by spreading over the muscular connections between the auricle and ventricle.

A. F. Stanley Kent described the auriculoventricular bundle in the *Journal of Physiology* in 1893, but did not work it out as completely as it was later worked out in the same year by William His, Jr., who was at that time professor of

anatomy at Leipzig. He showed more definitely that there was muscular continuity, and subjected it to experimental proof.

S. Tawara, in 1906, published a monograph more thoroughly describing the tissue and its function, and it is also referred to by his name as the node of Tawara. Later in the same year Keith and Flack confirmed his results, with some additional observations.

3. Johannes Purkinje was a Bohemian physiologist and anatomist born in 1787. He died in 1869. He was a friend of Goethe and a very active investigator, making an unusual number of contributions to our knowledge of anatomy and physiology. In 1839 when he described the fibers which bear his name he was professor of physiology and pathology at Breslau, where he was the founder of laboratory training for students. Because of his personality as well as his ability as an investigator and teacher, he exerted a great influence on the German science and teaching of his time.

The article of Keith and Flack describing the node, and the later article confirming the work of Tawara, should be read:

Keith, Arthur; and Flack, Martin: The Form and Nature of the Muscular Connections Between the Primary Divisions of the Vertebrate Heart, *J. Anat. & Physiol.* **41**: 172, 1907.
Keith, Arthur; and Flack, Martin: The Auriculoventricular Bundle of the Human Heart, Lancet **2**: 359, 1906.

"CARDIAC ASTHMA"

To the Editor:—Please discuss the physiology of "cardiac asthma" and recommend treatment, both of the attack and for the prevention of future attacks. Please omit name.

M.D., Indiana.

ANWSER.—"Cardiac asthma" is a general term used to designate dyspnea or hyperpnea consequent on such varying pathologic changes that it is impossible to discuss the physiology or the treatment in any specific way. The first step toward understanding the physiology or formulating any plan for treatment is to know just what is the underlying pathologic condition in the heart and in the kidneys as well.

To attempt to discuss any one phase would be only misleading. Cardiac asthma might be cardiac syphilis or coronary disease, or some phase of cardiorenal disease, or one of several other conditions. Treatment should be based on the pathologic condition. Where this is in doubt or indeterminable, one is perfectly safe in trying some theobromine salt and other symptomatic treatments.

DIAGNOSIS OF HALITOSIS

To the Editor:—A patient complains greatly of halitosis, which I have never been able to detect. Friends tell her about it frequently. I can find no cause for it. The teeth are in excellent repair. A good nose and throat man says that the sinuses and throat are normal; there is no sign of tuberculosis, bronchiectasis or cavitation in lung. The history of the patient reveals occasional "biliousness" and an approach to migraine. Constipation is not a prominent symptom, but occasionally the tongue is coated. Typhoid occurred when the patient was 2 years of age and influenza seven years before I saw her. Where else may I look? Please omit name.

M.D., Pennsylvania.

ANSWER.—In these days of halitosis advertising propaganda, the idea of an entirely psychic halitosis—a neurasthenic phobia—must be entertained, though the history of occasional "biliousness" should focus attention on the alimentary tract. A roentgen-ray examination may reveal colon stasis, possibly incompetence of the ileocecal valve, with enterotoxicosis in spite of daily bowel evacuation. A largely vegetarian diet and laxative regimen may correct such a disturbance. A test meal and stool examination may reveal deviations from the normal.

SILVER ARSPHENAMINE IN MULTIPLE SCLEROSIS

To the Editor:—Would you kindly advise me concerning the status of silver arsphenamine as a treatment of multiple sclerosis?

JOHN M. HIGGINS, M.D., New York.

ANSWER.—Silver arsphenamine and other arsenicals of this type have been administered in the treatment of multiple sclerosis on the basis of reports that a spirochete has been found in the tissues and that one successful inoculation of an animal with the disease had been accomplished. These results have not been confirmed by other observers. The results of arsphenamine treatment are extremely difficult to estimate as remissions are of frequent occurrence in the course of this disease even without treatment. The differential diagnosis between multiple sclerosis and disseminated syphilis of the nervous system is by no means always easy; for this reason many clinicians advise treatment of all patients showing signs of multiple sclerosis with arsphenamines. Improvements that have been reported have been said to differ from spontaneous remissions in certain respects, though this is not clear. Ill effects have not been reported as a result of the treatment.

"BISODOL"

To the Editor:—A New York physician highly recommended to his patients a certain product called bisodol, which is put up by the Bisodol Company, 1926 Broadway, New York. As I was questioned several times by physicians as well as pharmacists regarding the composition of this so-called remedy, I looked in vain through your valuable books: New and Nonofficial Remedies, the Propaganda for Reform, and also Nostrums and Quackery. So if you could give me the desired information I would appreciate this very much.

WILLIAM J. KOCH, pharmacist, New York.

ANSWER.—The advertising of the "BiSoDol Company" states that BiSoDol is composed of "Bismuth Subnit.—Magnes. Carb.—Sodium Bicarb.—Carica Papaya—Diastase—Ol. Menth-Pip" but contains no information in regard to the amount of each ingredient which is claimed to be present. The Council on Pharmacy and Chemistry has not examined the preparation nor has the A. M. A. Chemical Laboratory considered it worth while to analyze this "shotgun" mixture. In an article "Medical Credulity and Proprietary Medicines," M. Irving Sparks, M.A., M.B., of the Department of Pharmacology, University of Toronto, discusses a proprietary product which seems to be similar to "BiSoDol." It is stated in regard to the substance under discussion: "We believe that in ordinary practice it would be found that adequate effects could be produced by a mixture of magnesium carbonate and sodium bicarbonate in equal parts; the proportions in this preparation are about ten to twelve, flavored with a minim of oil of peppermint, or even a little less, for an ounce of powder. Any dispenser can readily rub either of these powders in a mortar with oil of peppermint and distribute the oil throughout the mixture."

EXAMINATION AND TREATMENT IN STERILITY

To the Editor:—1. If in course of investigation of sterility one finds the vaginal and cervical secretions hostile to a husband's normal sperm, what course of treatment is instituted to correct this? 2. If one finds abnormal sperm in a husband, namely, inactive and few in number, what course of treatment is recommended? I should like specific dietary instructions. 3. In artificial insemination, does one attempt to introduce sperm directly into the uterus or just into the cervix? Please omit name.

M.D., New Jersey.

ANSWER.—1. It is reported that adverse conditions of the vaginal and cervical secretions have been ameliorated by tampons carrying yeast or emulsions of *Bacillus bulgaricus*.

2. Occasionally the number and activity of spermatozoa are raised by massage of the prostate and vesicles and medical diathermy of the testes.

3. In artificial insemination it is considered best to deposit the sperm into the uterine cavity.

A recent article on this subject, which contains additional information, is the following:

Kurzrok, Raphael; and Miller, E. G., Jr.: Biochemical Studies of Human Semen and Its Relation to Mucus of the Cervix Uteri, *Am. J. Obst. & Gynec.* **15**: 56 (Jan.) 1928.

INFECTED CYSTIC TUMOR

To the Editor:—A man, aged 47, whose weight was 165 pounds (75 Kg.) and height 5 feet 8 inches (173 cm.), and whose health was good, had a mild case of gallbladder infection four and a half years ago with little trouble now from that source. About two months ago he noticed a small tumor in the left cheek about the size of a small white soup bean, located about where the buccal nerve branches to supply the upper and lower lips. The tumor gradually enlarged to about three times its original size, and protruded slightly so as to be noticeable externally. A young surgeon who was consulted diagnosed it as a fibroma and recommended surgical treatment. He also stated that removal of the tumor would entail possible paralysis from injuring the nerve, and that if this did occur the patient could smile only on one side. Several weeks later the tumor became more pointed and yellow capped. I removed this cap and drained out some pus. It has healed over and reduced two thirds in size in two weeks and I had hopes of its disappearing entirely. Now it is again noticeable externally and is slowly enlarging; it is about the size of a white soup bean and very hard. What would you advise? Please omit name.

M.D., Ark.

ANSWER.—This is quite likely a cystic tumor with a superimposed pus infection, which subsided only to be followed by reaccumulation of its cystic contents. The diminution in size following drainage suggests this. In such a location the cyst could be a dermoid, although a sebaceous cyst is of much more common occurrence.

In its location between the lower fibers of the facial nerve, care must be exercised in enucleation, since injury to the fibers at this level will produce weakness or paralysis of one side of the mouth. On the other hand, a benign tumor displaces but does not infiltrate the nerve, and with reasonable care a blunt dissection will enable one to remove the cyst wall without injury to the nerve. This should be done before another inflammatory reaction occurs, because of the additional scar tissue and the added difficulty under such conditions of obtaining a clean plane of cleavage.

FORMULA FOR SHIVE SOLUTION — PHYTOPHARMACOLOGIC WORK

To the Editor:—Will you kindly give me the formula for Shive solution, as used by D. I. Macht? F. S. S., Michigan.

ANSWER.—The solution employed by D. I. Macht (THE JOURNAL, Sept. 3, 1927, p. 753) was the so-called Shive solution, "which contains calcium nitrate, magnesium sulphate, and monopotassium acid phosphate (Shive: *Physiol. Rev.* **1**:327 1915). Such a solution was prepared by mixing 10.4 cc. of 0.5 molar solution of calcium nitrate, 30 cc. of 0.5 molar solution of magnesium sulphate, and 36 cc. of 0.5 molar monopotassium acid phosphate with distilled water sufficient to make 1 liter. The normal growth of the lupine rootlets was studied by immersing the seedlings in a mixture of normal Shive solution with an equal part of distilled water. The effect of cocaine and other drugs was studied by dissolving chemicals in distilled water and mixing such drug solutions with equal parts of the normal Shive solution" (Macht, D. I., and Livingston, M. B.: Effect of Cocaine on the Growth of Lupinus Albus: A Contribution to the Comparative Pharmacology of Animal and Plant Protoplasm, *J. Gen. Physiol.*, May 20, 1922, p. 573). According to a communication from Dr. Macht, in working along phytopharmacologic lines it is necessary for the investigator to have sufficient training in the methods not only of animal pharmacology and physiology but also of botany and plant physiology. This is especially true in regard to the preparation of the seed and germination and raising of the seedlings. The Shive solution is only a part of the technic and reagents required. For very accurate work, hard glass test tubes should be used and seedlings which are quite healthy and nearly of the same length should be selected in order to detect fine differences. As in all new scientific procedures experience is the greatest teacher, and failure in obtaining satisfactory growth or other results should not discourage the beginner.

POTASSIUM THIOCYANATE IN HYPERTENSION

To the Editor:—In THE JOURNAL, January 14, page 82, there is an article by Lester T. Gager, with a note on sulphocyanate therapy. I should like to know the toxicity of this drug and whether or not there are any cumulative effects from it when used in the grain and a half dosage, as advised in the article. I have a case of hypertension that shows essential hypertension, as the superficial arteries of the arm seem very flexible and the urine is negative with a concentration up to 1.020. The patient responds very nicely to nitroglycerin in connection with a salt free diet and rest in bed with graduated exercise. However, the patient seems to depend on the nitroglycerin and at times the effects of it are very transient, and if persisted in after the pressure is reduced to 160/110 there seems to be a little discomfort, which I attribute to the nitroglycerin. The highest pressure has been 250/130, so there seems to be a discrepancy in the reduction of the diastolic pressure. There is a definite tachycardia when the pressure is very high, but the pulse rate is 70 when the pressure is around 160. It seems to me that this is an ideal case in which to try the sulphocyanate, if there is an increase in the patient's comfort with the decrease in the blood pressure. However, as my chemically pure potassium sulphocyanate is labeled with such a glaring poison sign, I cannot help but be a little timid in experimenting with it, although I feel that a depressant is clearly indicated in this case, and nitroglycerin, while prompt in its actions, does result in a certain amount of discomfort when used persistently.

H. D. ALLEN, JR., Milledgeville, Ga.

ANSWER.—This letter was referred to Dr. Leslie T. Gager, who writes:

"I have used potassium thiocyanate (potassium sulphocyanate) in the dosage and according to the schedule indicated in my article, without evidence of toxic effect. I recommend no larger doses than 1½ grains (0.1 Gm.) given three times a day, for one or two weeks, and then gradually reduced. Larger doses are apt to produce too abrupt a fall in blood pressure. Like the iodides, thiocyanate may produce a drug rash, which is unimportant except for the itching and appearance. In my experience the thiocyanate has a slower but much more lasting effect than have the nitrites or glyceryl trinitrate ('nitroglycerin')."

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 9-10. Sec., Reg. Bd., Dr. J. W. Walker, Fayetteville. Sec., Homeo. Bd., Dr. A. A. Pringle, Eureka Springs. Sec., Eclectic Bd., Dr. C. E. Laws, 803½ Garrison Ave., Fort Smith.

COLORADO: Denver, April 3. Sec., Dr. Philip Work, 324 Metropolitan Bldg., Denver.

CONNECTICUT: Hartford, March 13-14. Sec., Reg. Bd., Dr. Robert L. Rowley, 79 Elm St., Hartford. Homeo. Bd., New Haven, March 13. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

DISTRICT OF COLUMBIA: Washington, April 10. Sec., Dr. Edgar P. Copeland, Suite 110, 1801 Eye St., Washington.

HAWAII: Honolulu, April 9-12. Sec., Dr. James A. Morgan, Room 43 Young Bldg., Honolulu.

IDAHO: Boise, April 3. Commissioner of Law Enforcement, Hon. F. E. Lukens, Boise.

ILLINOIS: Chicago, April 10-12. Supt. of Reg., Mr. V. C. Michels, Springfield.

LOUISIANA: New Orleans, May 1. Sec., Homeo. Bd., Dr. F. H. Hardenstein, 830 Canal St., New Orleans.

MAINE: Portland, March 13-14. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.

MASSACHUSETTS: Boston, March 13-15. Sec., Dr. Frank M. Vaughan, 144 State House, Boston.

MINNESOTA: Minneapolis, April 17-19. Sec., Reg. Bd., Dr. A. E. Comstock, 524 Lowry Bldg., St. Paul. Basic Science examinations, April 3. Sec., Basic Science Bd., Dr. E. T. Bell, U. of Minnesota, Minneapolis.

MONTANA: Helena, April 3-5. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

NEVADA: Carson City, May 7-9. Sec., Dr. Edw. E. Hamer, Carson City.

NEW MEXICO: Santa Fe, April 9-10. Sec., Dr. Wm. T. Joyner, Roswell.

OKLAHOMA: Oklahoma City, March 13-14. Sec. Dr. J. M. Byrum, Shawnee.

RHODE ISLAND: Providence, April 5-6. Sec., Dr. B. U. Richards, State House, Providence.

WISCONSIN: Madison, March 17. Sec., Basic Science Bd., Prof. M. F. Guyer, U. of Wisconsin.

California October Examination

Dr. Charles B. Pinkham, secretary of the Board of Medical Examiners of the State of California, reports the written examination held at Sacramento, Oct. 18-20, 1927. The examination covered 9 subjects and included 90 questions. An average of 75 per cent was required to pass. Of the 41 candidates examined, 36 passed and 5 failed. Forty-three candidates were licensed by reciprocity and 4 were licensed by endorsement of their credentials. The following colleges were represented:

PASSED College	Year Grad.	Per Cent
Stanford University School of Medicine	(1927)	85.6, 87
University of California Medical School	(1927)	86.2, 86.4, 87.8
Northwestern University Medical School	(1927)	78.9, 80, 81.9,* 87.6
Rush Medical College	(1927)	80.3, 82.1, 82.9, 83.1
University of Illinois College of Medicine	(1927)	84.6, 85.2, 87.4
University of Kansas School of Medicine	(1927)	78
Johns Hopkins University School of Medicine	(1925)	83.7
Harvard University Medical School	(1925) 89.3; (1927)	87.3, 93.3
St. Louis University School of Medicine	(1927)	75.1, 86.7
Creighton University School of Medicine	(1927)	76.7
University of Nebraska College of Medicine	(1927)	82
Cornell University Medical College	(1927)	80.8, 86.9
University of Cincinnati College of Medicine	(1927)	86.2
University of Oregon Medical School	(1927)	86.1
Hahnemann Med. Coll. and Hosp. of Philadel., Homeo.	(1926)	84.6
Jefferson Medical College of Philadelphia	(1923)	87
University of Pennsylvania School of Medicine	(1926)	81.1
Medical College of Virginia	(1917)	75.2
Licentiate of the Royal College of Physicians, London, and the Royal College of Surgeons, England	(1925)	81
University of Leningrad, Russia	(1922)†	77
University of Moscow, Russia	(1907)†	86.8

FAILED College	Year Grad.	Per Cent
Howard University School of Medicine	(1921)	3
University of Buffalo School of Medicine	(1926)	71
University of Rome, Italy	(1916)	64.2
University of Tomsk, Siberia, Russia	(1895)† 64.9; (1916)†	64.4

LICENSED BY RECIPROCITY College	Year Grad.	Reciprocity with
University of Colorado School of Medicine	(1919), (1926)	Colorado
Emory University School of Medicine	(1926)	Georgia
Illinois Medical College, Chicago	(1905)	Alabama
Jenner Medical College, Chicago	(1913)	Illinois
Loyola University School of Medicine	(1916)	Illinois
Northwestern Univ. Med. School	(1906) Montana; (1922)	Illinois
University of Illinois College of Medicine	(1907)	Illinois
State Univ. of Iowa College of Homeopathic Med.	(1913)	Iowa
State Univ. of Iowa Coll. of Med.	(1907), (1920), (1925, 2)	Iowa
Harvard University Medical School	(1925)	Ohio
University of Michigan Medical School	(1906)	Oregon
University of Minnesota Medical School	(1921)	Minnesota
Barnes Medical College, St. Louis	(1910)	Iowa
Kansas City Hahnemann Medical College	(1903)	Florida
St. Louis Univ. School of Med.	(1922) Missouri; (1925)	Montana

University Medical College of Kansas City	(1906)	Missouri
Washington Univ. School of Med.	(1894) Missouri; (1925)	Michigan
Creighton University School of Medicine	(1916)	Nebraska
University of Nebraska College of Medicine	(1919), (1921)	Nebraska
New York Medical College and Hospital for Women, Homeopathic, New York City	(1916)	New York
Cleveland Homeopathic Medical College	(1904)	Ohio
University of Cincinnati College of Medicine	(1927)	Ohio
Univ. of Oklahoma School of Med.	(1922) New York; (1926)	Oklahoma
University of Oregon Medical School	(1925)	Oregon
Jefferson Medical College of Philadelphia	(1905)	Penna.
	(1908) Washington; (1921) Ohio, Utah	
University of Pennsylvania School of Medicine	(1914)	Terr. Haw.
Meharry Medical College	(1919)	Georgia
University of Tennessee College of Medicine	(1925)	Tennessee
McGill University Faculty of Medicine	(1902), (1906)	New York
	(1923) Ohio	

ENDORSEMENT OF CREDENTIALS

College	Year Grad.	Endorsement with
George Washington University Medical School	(1905)	U. S. Navy
University of Michigan Medical School	(1904)	U. S. Army
Washington University School of Medicine	(1925)	U. S. Navy
Jefferson Medical College of Philadelphia	(1926)	U.S.P.H.S.

* This candidate will receive his M.D. degree on the completion of one year's internship in a hospital.
† Verification of graduation in process.
‡ Grade not given.

Nebraska October Examination

Mr. Lincoln Frost, secretary of the Nebraska Board of Medical Examiners, reports the written examination held at Lincoln, Oct. 31-Nov. 2, 1927. The examination covered 10 subjects and included 80 questions. An average of 75 per cent was required to pass. Eight candidates were examined, all of whom passed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent
University of Arkansas School of Medicine	(1925)	81.8
Rush Medical College	(1927)	81.7
State University of Iowa College of Medicine	(1922)	79.8
Tufts College Medical School	(1906)	82.1
Creighton University School of Medicine	(1927)	83.8
University of Nebraska College of Med.	(1924) 81.6; (1926)	82.4
University of Oklahoma School of Medicine	(1926)	81.3

Mr. Frost also reports that 1 physician was licensed after the special examination held at Lincoln, Oct. 15, 1927:

PASSED

College	Year Grad.	Per Cent
University of Nebraska College of Medicine	(1927)	84.3

Colorado July Examination

Dr. Philip Work, secretary of the Colorado State Board of Medical Examiners, reports the written examination held at Denver, July 5, 1927. The examination covered 8 subjects and included 80 questions. An average of 75 per cent was required to pass. Of the 74 candidates examined, 46, including 3 osteopaths and 2 undergraduates, passed, and 28 candidates, including 2 osteopaths and 3 undergraduates, failed. Nine candidates were licensed by reciprocity and 1 candidate was licensed by endorsement of his credentials. The following colleges were represented

PASSED

College	Year Grad.	Per Cent
Stanford University School of Medicine	(1927)	88.6*
University of Colorado School of Med.	(1927) 79, 79.3, 79.4, 80.3, 80.5, 81.3, 82, 82.5, 83, 83.6, 84.3, 84.4, 84.4, 84.6, 84.6, 84.6, 85.1, 85.6, 86.1, 86.6, 87.6, 88.5, 88.8, 89.3	
Northwestern University Medical School	(1927)	76.6
Rush Medical College	(1927) 84.6,*	87.4*
Physio-Medical College of Indiana, Indianapolis	(1898)	78
Johns Hopkins University School of Medicine	(1916)	89.7
College of Physicians and Surgeons, Boston	(1925)	83.2
Ensworth Medical College, St. Joseph	(1897)	80
Kansas City College of Medicine and Surgery	(1927)	82.4
Kansas City University of Physicians and Surgeons	(1924) (1926) 75.9; (1927) 80.7, 81.4	81.5
St. Louis College of Physicians and Surgeons	(1924) (1925) 75.1; (1927) 76, 79.2	75;
Osteopaths	80, 81.7,	85.4
Undergraduates	78.2,	85.1

FAILED

College	Year Grad.	Per Cent
Kansas City College of Physicians and Surgeons	(1921) (1922) 37.5; (1923) 51.8; (1927) 58, 63.4, 70.8	53;
Kansas City University of Physicians and Surgeons	(1926) (1927) 32.3, 65.3, 65.6, 68.1	69.4;
St. Louis Coll. of Physicians and Surgeons	(1921) 72; (1922) (1923) 59.5, 66.1; (1925) 34.7; (1926) 60.6, 71.7; (1927) 59.8, 72.2, 73.3	59.2;
Medical College, Sun Ville, China	(1920)†	49.7
University of Kharkov, Russia	(1894)‡	§
Osteopaths	62.3,	66.1
Undergraduates	42.1,	69.4, 71.4

LICENSED BY RECIPROCITY

College	Year Grad.	Reciprocity with
Chicago Homeopathic Medical College	(1883)	Illinois
Kansas Medical College, Topeka	(1902)	China
University of Louisville School of Medicine	(1880)	Missouri
University of Michigan Medical School	(1925)	Indiana
St. Louis University School of Medicine	(1924)	Illinois
University Medical College of Kansas City	(1908)	Missouri
University of Nebraska College of Medicine	(1924), (1926)	Nebraska
Trinity Medical College, Toronto	(1901)	Nebraska

ENDORSEMENT OF CREDENTIALS

Harvard University Medical School	(1923)	N. B. M. Ex.

* This candidate will receive his M.D. degree on the completion of one year's internship in a hospital.
‡ Verification of graduation in process.
§ No grade given.
† No record of medical school.

Book Notices

MOSQUITO REDUCTION AND MALARIAL PREVENTION. A Précis. By J. A. Crawford, M.B., Ch.B., Capt. R. A. M. C., Officer in Charge Anti-Malarial Measures, Colaba Military Area, and B. S. Chalam, L.R.C.P. & S., L.R.F.P. & S., Officer in Charge, Anti-Malarial Measures, Bombay Reclamation Scheme. Cloth. Price, $1.75. Pp. 102, with illustrations. New York: Oxford University Press, 1926.

The authors of this small but excellent book write from the point of view of officers actually in charge of antimalarial work. Consequently, as might be expected, the book is practical. They write, "It has been our experience that the manager of a tea garden, or a malarial inspector, or the N. C. O. in charge of a sanitary squad dealing with antimalarial measures begins to take a much keener interest in his work when he has acquired some knowledge of the habits and life-history of the mosquito." They give, in nontechnical language, the information necessary to the acquirement of this knowledge. The chapter on the habits of mosquitoes, however, shows where the mosquito may be found and where it breeds—not in general terms, but in detail. The following chapter, on preventive work, demonstrates the methods of offense and defense against the three links necessary for the chain of malarial infection. Practical difficulties are named and met; useful tables are printed. Although especially valuable in India, the book could be used as a field guide anywhere that mosquito work is to be done. The more exhaustive works on the subject frequently do not meet the needs of the field worker; this book does meet them.

ANATOMISCHE UNTERSUCHUNGEN ÜBER DIE TUBERKULOSE DER OBEREN LUFTWEGE. Von Dr. Paul Manasse, o. ö. Professor an der Universität und Vorstand der Klinik für Ohren-, Nasen- und Kehlkopfkranke in Würzburg. Band III. Die Tuberkulose und ihre Grenzgebiete in Einzeldarstellungen. Beihefte zu den Beiträgen zur Klinik der Tuberkulose und spezifischen Tuberkuloseforschung. Herausgegeben von L. Brauer und H. Ulrici. Paper. Price, 9.90 marks. Pp. 101, with 62 illustrations. Berlin: Julius Springer, 1927.

This is a study of the pathologic-anatomic observations in tuberculosis of the upper respiratory passages. It is part of an apparently large and ambitious study of tuberculosis and its borderline implications and is a tribute to the energy that possesses our German colleagues in medicine. The pathologic conditions are discussed under the conventional headings of infiltration, ulceration, perichondritis and tuberculoma. The illustrations are numerous and excellent. There are a number of fine photographs of specimens and some good colored plates.

DICTIONARY OF BACTERIOLOGICAL EQUIVALENTS — FRENCH-ENGLISH; GERMAN-ENGLISH; ITALIAN-ENGLISH; SPANISH-ENGLISH. By William Partridge, F.I.C., Joint Public Analyst for the County of Dorset and the Boroughs of Poole and Penzance. Cloth. Price, $4. Pp. 141. Baltimore: Williams & Wilkins Company, 1927.

This polyglot dictionary of bacteriologic equivalents will be most thankfully received by English speaking scientists, librarians, bibliographers and abstracters throughout the world. Many are the hours and the headaches it will save, for, as the compiler writes in his preface, "Certain foreign words offer apparently obvious translations, but it must be remembered that it is often of great value to establish beyond all possible doubt that the 'guessable' meaning is the correct one." Truly, and authorities in the flesh are rare and

irritable and equivalents in the literature are far to seek. Mr. Partridge has verified his translations by references to corroborative sources. The book contains the English equivalents of bacteriologic terms in the following numbers: French, about 2,400; German, about 2,600; Italian, about 1,200, and Spanish, about 1,600.

THE MENINGIOMAS ARISING FROM THE OLFACTORY GROOVE AND THEIR REMOVAL BY THE AID OF ELECTRO-SURGERY. By Harvey Cushing, C.B., D.S.M., A.M., Professor of Surgery in Harvard University. Paper. Pp. 53, with 28 illustrations. Glasgow: Jackson, Wylie & Company, 1927.

Surgery boasts of no more definite stylist than Cushing, and this applies to his literary compositions as well as to his surgical technic. This small monograph is the second Macewen memorial lecture. It tells superbly the story of Cushing's personal surgical experiences with the olfactory groove meningiomas. In it is emphasized the place which he believes the use of electrosurgical methods will come to occupy in the field of neurologic surgery. There is no question that it is an important addition to the neurologic surgeon's armamentarium. Its greatest influence will be felt, however, when it can be successfully employed in the surgical removal of the gliomas. At present all such electrosurgical methods seem to have proved disappointing.

AN ELEMENTARY LABORATORY GUIDE IN GENERAL BACTERIOLOGY. By Harold J. Conn, Soil Bacteriologist, New York Agricultural Experiment Station. Cloth. Price, $3. Pp. 165, with 27 illustrations. Baltimore: Williams & Wilkins Company, 1927.

This is a laboratory guide to accompany a textbook written by the author. The guide is intended to serve only introductory classes and the laboratory exercises are therefore elementary. These include the preparation of mediums, water and milk examination, pure culture work, and studies on yeasts, molds, soil bacteria and a few pathogenic organisms. Exercises in immunology deal with the Widal test and the complement fixation reaction. Great care has been taken to insure successful experiments by the student through detailed directions.

I CAPILLARI NEL BAMBINO. Por Gino Frontali. Paper. Price, 12 lire. Pp. 88, with illustrations. Bologna: L. Cappelli, 1927.

This is a study of the capillaries of the living child as to microscopic appearance, resistance, permeability and pressure. These topics are first discussed as they concern the normal child, and then are taken up the same conditions as encountered in many of the commoner diseases of children. The monograph is a valuable contribution, though as the author himself states in his concluding paragraph much remains to be done before knowledge of this subject is full or accurate. One wonders why in the rather extensive bibliography the name of Krogh is not found.

PRACTICAL OTOLOGY. By Morris Levine, M.D., Associate Professor of Otology, New York Post-Graduate Medical School and Hospital. Cloth. Price, $5.50. Pp. 387, with 148 illustrations. Philadelphia: Lea & Febiger, 1927.

In this excellent book Dr. Levine gives a comprehensive account of his lectures embodying clinical observations and the importance of careful and thoroughly understood treatment. The chapters on anatomy and physiology are admirably succinct and clear and his illustrations in point are usually apposite and interesting. The original illustrations and three colored plates deserve especial mention. The author's reference to Wittmaach's extensive contribution to otology on pneumatization of the mastoid is so briefly touched on that the reader is left with a confused idea. The book is complete on treatment, reviewing in good form the zinc ionization treatment for chronic suppurative otitis media. Included with this is the use of quartz light therapy, diathermy, roentgen rays and radium. The application of vaccines and foreign proteins in otology is reviewed, as well as blood transfusion. Although the book is modern in every respect, the author does not include Tobey's test for increase of spinal fluid pressure in connection with his chapter on sinus thrombosis. It is a good book for the student of otology and can be recommended to the graduate student as well as the general practitioner.

DIAGNOSTIK UND THERAPIE DER KINDERKRANKHEITEN MIT SPEZIELLER ARZNEIVERORDNUNGEN FÜR DAS KINDESALTER. Ein Wegweiser für den praktischen Arzt. Von Prof. Dr. F. Lust, Direktor des Kinderkrankenhauses in Karlsruhe. Fifth edition. Paper. Price, 10.50 marks. Pp. 523. Berlin: Urban & Schwarzenberg, 1927.

This edition (autumn, 1927) has followed so quickly after the fourth (spring, 1926) that only a few chapters of the book have been altered, among others those on diabetes and tuberculosis. The author thoroughly reviews the literature of the past year concerning diagnosis and therapy, and incorporates in this edition those additions which he from his personal experience believes are sound.

This is essentially a practical book for the pediatrician and especially the general practitioner doing some pediatrics. Although the title indicates a book on diagnosis and treatment, the emphasis is predominately on treatment. The first part of the book is divided into two sections; 343 pages are devoted to the outline diagnosis and detailed treatment of the various infants' and children's diseases according to the group of organs affected, such as the heart and blood vessels, glands of internal secretions, and skin. The second section, of thirty pages, describes therapeutic technic, such as methods of blood transfusions, baths, breathing exercises, and inhalations. The second part of the book is also divided into two sections. The first 107 pages of which is a miniature pediatric pharmacopeia and is a valuable portion of the book. Virtually all the practical drugs are listed, with their synonyms, physical properties, uses, dosages and antidotes. Besides giving general rules for the dosages in four groups —infants, children from 2 to 5 years, children from 6 to 12, and adults—he also gives the maximum dose for adults. If a drug cannot be used for infants, the dosage for this group is omitted. The preparations of certain infant foods, such as the butter flour mixture and albumin milk, are described. The second section of the second part, comprising about twenty pages, is devoted to a classification and description of sanatoriums for children in various parts of Europe, giving the location, season, number of beds and physicians in charge. This portion of the book is of interest only to the German physician.

The book is a manual of therapy not for the undergraduate student but for the practicing physician. Its chief advantage over somewhat similar works is that, after noting in the first part of the book what drugs to use in a certain condition, one may ascertain the exact dosage of such drugs for definite ages in the second portion of the book. The book is popular among American physicians taking postgraduate courses in pediatrics in Europe. The price is reasonable, in view of the amount of information contained.

A STUDY IN TUBERCLE VIRUS, POLYMORPHISM, AND THE TREATMENT OF TUBERCULOSIS AND LUPUS WITH OLEUM ALLII. By William C. Minchin, M.D. Third edition. Cloth. Pp. 110, with illustrations. London: Baillière, Tindall & Cox, 1927.

This book contains, in utterly unscientific presentation, a rediscovery of Much's granules apparently not differentiated from artefacts, and vague theories about bacterial mutation, ending up with conclusions such as: "It may even turn out that such diseases as syphilis, glanders, cancer, and tuberculosis are also forms of alternate generation." The second part of the book gives the simple recipe for a treatment of tuberculosis with oil of garlic, successful cure guaranteed within two months, even in far advanced cases.

THE INJECTION TREATMENT OF VARICOSE VEINS. By A. H. Douthwaite, M.D., M.R.C.P. Second edition. Paper. Price, 3/-net. Pp. 43. London: H. K. Lewis & Company, Ltd., 1928.

The subject of this little book is more and more attracting the attention of physicians. In 1927, Dr. Douthwaite extended a periodical article of his into a small, readable volume. In about half a year there was a demand for another edition. The second edition, therefore, cannot differ greatly from the first. The author has, however, "attempted to bring the contents up to date with any fresh developments in this branch of therapeutics, particularly with reference to the treatment of ulcers, and to published complications which have followed treatment."

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits. Books listed in this department are not available for lending. Any information concerning them will be supplied on request.

AN INTRODUCTION TO THE THEORY AND USE OF THE MICROSCOPE. By C. R. Marshall, M.A., M.D., LL.D., Professor of Materia Medica and Therapeutics in the University of Aberdeen, and H. D. Griffith, B.A., Carnegie Teaching Fellow in Natural Philosophy in the University of Aberdeen. Boards. Price, 3/6 net. Pp. 90, with 32 illustrations. London: George Routledge & Sons, Ltd., 1928.

The details of the use of this most valuable accessory to medical practice.

FOOD INFECTIONS AND FOOD INTOXICATIONS. By Samuel Reed Damon, A.M., Ph.D., Associate Professor of Bacteriology, the Johns Hopkins University School of Hygiene and Public Health. Cloth. Price, $4. Pp. 266, with illustrations. Baltimore: Williams & Wilkins Company, 1928.

Detailed knowledge in a field in which much new knowledge is available.

ALLEN'S COMMERCIAL ORGANIC ANALYSIS. A Treatise on the Properties, Modes of Analysis, and Proximate Analytical Examination of the Various Organic Chemicals and Products Employed in the Arts, Manufactures, Medicine, etc, with Concise Methods for the Detection and Estimation of Their Impurities, Adulterations, and Products of Decomposition. Volume VI. Colorimetry, Dyes and Colouring Matters, the Synthetic Dyestuffs, and the Analysis of Colouring Matters. Edited by Samuel S. Sadtler, S.B., Elbert C. Lathrop, A.B., Ph.D., and C. Ainsworth Mitchell, M.A., F.I.C. Fifth edition. Cloth. Price, $7.50. Pp. 658, with illustrations. Philadelphia: P. Blakiston's Son & Company, 1928.

THE DE LAMAR LECTURES, 1926-1927, OF THE SCHOOL OF HYGIENE AND PUBLIC HEALTH JOHNS HOPKINS UNIVERSITY. By F. Neufeld, Alfred E. Cohn, George H. F. Nuttall, Edward Francis, William H. Park, Alphonse R. Dochez, Veranus A. Moore, Edgar L. Collis, Earle B. Phelps, Marshall A. Barber. Cloth. Price, $5. Pp. 223, with illustrations. Baltimore: Williams & Wilkins Company, 1928.

I. A METHOD FOR ESTIMATING THE POTENCY OF SMALLPOX VACCINE. By John N. Force, and James P. Leake. II. The Immunological Relationship of Alastrim and Mild Smallpox. By James P. Leake, and John N. Force. Treasury Department. Hygienic Laboratory Bulletin No. 149. Paper. Price, 35 cents. Pp. 64, with 29 illustrations. Washington: Government Printing Office, 1927.

L'ARCHITECTURE CELLULAIRE NORMALE DE L'ÉCORCE CÉRÉBRALE. Par le Dr. Constantin v. Economo, professeur de psychiatrie et de neurologie à l'Université de Vienne. Édition française par le Dr. Ludo van Bogaert, agrégé à l'Université Libre de Bruxelles. Paper. Price, 80 francs. Pp. 183, with 61 illustrations. Paris: Masson & Cie, 1927.

TRAVAUX ET MÉMOIRES. Tome II: Amyotrophie Charcot Marie. Hérédo-ataxie cérébelleuse. Les lacunaires. Travaux divers sur l'encéphale. Infections et maladies nerveuses. Maladies de la moelle varia. Par Pierre Marie. Paper. Price, 30 francs. Pp. 393, with illustrations. Paris: Masson & Cie, 1928.

PRINCIPES DE PHARMACODYNAMIE. Constitutions chimiques; propriétés physiologiques. Par L. Hugounenq, professeur à la Faculté de médecine de Lyon, et G. Florence, professeur agrégé à la Faculté de médecine de Lyon. Paper. Price, 40 francs. Pp. 390, with illustrations. Paris: Masson & Cie, 1928.

RADIOLOGIE CLINIQUE DU TUBE DIGESTIF. Publiée sous la direction de MM. Pierre Duval, J.-Ch. Roux, H. Béclère. I. Estomac et duodénum. Par Pierre Duval, Jean-Charles Roux, et Henri Béclère. Cloth. Price, 265 francs. Pp. 333, with illustrations and 87 plates. Paris: Masson & Cie, 1927.

ON ROUS, LEUCOTIC AND ALLIED TUMOURS IN THE FOWL. A Study in Malignancy. By J. P. McGowan, M.A., B.Sc., M.D., Pathologist to the Rowett Research Institute, Aberdeen. Cloth. Price, 10 shillings net. Pp. 99, with 21 illustrations. London: H. K. Lewis & Company, Ltd., 1928.

WAS KANN UND WANN MUSS DER PRAKTISCHE ARZT OPERIEREN? Von Richard Mühsam, Prof. Dr. med., aerztlicher Direktor des Rudolf Virchow-Krankenhauses in Berlin. Paper. Price, 5 marks. Pp. 118. Leipsic: Georg Thieme, 1928.

DIE BEHANDLUNG DER CYSTITIS, PYELITIS UND DER NIERENSTEINERKRANKUNG. Von Leopold Casper, Geh. San.-Rat, a. o. Professor an der Universität Berlin. Paper. Price, 3.60 marks. Pp. 79. Leipsic: Georg Thieme, 1928.

REPORT OF THE MEDICAL RESEARCH COUNCIL FOR THE YEAR 1926-1927. Paper. Price, 3s. net. Pp. 152. London: His Majesty's Stationery Office, 1928.

AMERICAN COLLEGE OF SURGEONS FIFTEENTH YEAR BOOK, 1928. Cloth. Pp. 836, with illustrations. Chicago, 1928.

Medicolegal

Liability of Hospital for Negligence of Anesthetist

(Georgia Baptist Hospital v. Smith (Ga.), 139 S. E. R. 101)

The Court of Appeals of Georgia, division 1, in affirming a judgment for damages in favor of the plaintiff, a Mrs. Smith, says that, ordinarily, an incorporated hospital, primarily maintained as a charitable institution, is not liable for the negligence of its officers and employees, unless it fails to exercise ordinary care in the selection of competent officers and employees, or fails to exercise ordinary care in retaining such officers and employees.

In the instant case the plaintiff (a pay woman patient), while undergoing a major operation in the defendant hospital, and while lying unconscious and helpless, was severely burned and permanently injured (the sight of one eye being practically destroyed) through the gross negligence of one of the defendant's anesthetists, who, while administering ether to the plaintiff, allowed it to come in contact with the plaintiff's face and eyes, thereby destroying her eyesight as stated, and severely burning her face, and causing her intense pain and suffering for many months. Under the ruling in the first paragraph and the facts of this case, the defendant hospital was not liable for the negligence of its anesthetist, unless it had failed to exercise ordinary care in her selection. However, this court cannot hold that there was no evidence authorizing the jury to find, first, that the anesthetist was incompetent; and, secondly, that the defendant hospital had failed to exercise ordinary care in her selection. It was true that the petition failed to allege that the anesthetist was generally incompetent, or that the defendant did not exercise ordinary care in her selection. However, no demurrer to the petition was interposed, and those issues were raised by the evidence adduced, and were charged on by the court. The verdict in favor of the plaintiff was authorized.

Evidence of Attendants and on Hypothetical Questions

(Mason et al. v. State Bank of Orlando & Trust Co. et al. (Fla.), 113 So. R. 664)

The Supreme Court of Florida, division B, in affirming an order admitting a contested will to probate, says that the testimony tending to show mental incapacity of the testatrix was predicated largely on hypothetical questions propounded to physicians and nurses who did not attend her in her last illness. This testimony was completely rebutted by the evidence of the physicians and nurses who attended the testatrix at the time of the execution of the will, all of whom testified that she was fully competent to make a will. On the question of the mental capacity of a testatrix, the evidence of physicians and nurses who attended her in her last illness, during which time the will was executed, will be accepted over testimony predicated on hypothetical questions propounded to physicians and nurses who did not attend the testatrix in her last illness.

Unvaccinated Drugless Healer Subject to Quarantine

(City of Seattle v. Cottin (Wash.), 258 Pac. R. 520)

The Supreme Court of Washington, in affirming a judgment of conviction of the defendant for the violation of a city ordinance, says that the complaint charged that on a stated date he committed a misdemeanor in that he did wilfully and unlawfully refuse to remain in quarantine as ordered so to do by the chief quarantine officer of the city, all of which was contrary to an ordinance of the city providing for the preservation and protection of the public health in the city. The facts admitted were that the defendant, a drugless healer, having a certificate to practice his pursuit, issued to him as a practitioner of mechanotherapy, in his professional capacity visited a person in Seattle infected with smallpox. This fact became known to the chief quarantine officer of the city, who requested the defendant to submit to vaccination or go into quarantine. The defendant at first agreed to go into quarantine, but afterward refused to remain in quarantine, left Seattle, and, after remaining away

about eighteen days, returned and was arrested, on complaint and warrant. It was also admitted that at the time of being exposed to smallpox, as alleged in the complaint, the defendant had not been vaccinated for a period of fifteen or twenty years and had had no previous infection from smallpox.

The defendant contended that, having been legally qualified to practice a certain system of healing, under statutes relating thereto, he was entitled to be included within the class known as physicians and within the exception in the city ordinance of physicians when in the exercise of their duties as such. Much learned and able discussion was advanced and many decisions were cited to sustain the contention that he was, and entitled to be called, a physician. But this court is not disposed and does not find it necessary to enter into that field of discussion.

There is no doubt, and it was not denied, that the city had the power to enact the ordinance here in question and had the power to create health and quarantine officers, as it had done, by the charter and ordinance provisions. Both the city and the state board of health, which is given very comprehensive powers by the state statutes (Rem. Comp. Stat. sec. 6001), have made rules and regulations for the quarantine of persons liable to infection from smallpox if not vaccinated within seven years or if not previously immunized by infection from the disease. This very ordinance (15957) and an amendatory ordinance (37928) have been before this court and were upheld as valid. *State ex rel. McBride* v. *Superior Court*, 103 Wash. 409, 174 Pac. 973. Another ordinance (32444) was also considered in connection therewith, and the powers of city and state to order the quarantine of persons suspected of infection with contagious diseases upheld.

So far as the ordinance of Seattle exempts physicians of any kind or school, it must yield to the superior authority of the state board of health which has adopted the rule:

> Persons not living on the premises who are susceptible (not vaccinated nor having had previous infection), and who have been exposed, shall be isolated or kept under the observation of the health officer or physician for a period of eighteen days. Exposed immunized persons are exempt from isolation if successfully vaccinated within seven years or if they have had the disease. Submission to vaccination exempts the individual from isolation.

Under those provisions no one is exempted except exposed immunized persons, those who have been successfully vaccinated within seven years, or those who submit to vaccination —under none of which classes could the defendant claim exemption.

Physicians May Testify to Employment and Dates

(Metropolitan Life Ins. Co. v. Head (Ind.), 157 N. E. R. 448)

The Appellate Court of Indiana says that, in this action on a life insurance policy which the defendant company contended was void by reason of certain alleged misrepresentations made by the insured in his application for insurance, two physicians were called as witnesses, and, after testifying to the fact of their employment as the insured's physicians, and to their treatment of him for diabetes, their evidence was, on motion, stricken out, on the ground that it was privileged. Section 550 of Burns' 1926 statutes of Indiana provides that physicians shall not be competent witnesses as to matters communicated to them as such by patients in the course of their profession, or advice given in such cases. But this statute does not prohibit physicians from testifying to the fact of employment, the rendition of professional services, and the dates thereof. What the statute does not exclude is competent. Competence is the rule, incompetence the exception.

Proper to Show Physician Paid by Insurance Company

(Hall v. Fulton Iron Works Co. (Mo.), 296 S. W. R. 851)

The St. Louis (Mo.) Court of Appeals, in affirming a judgment in favor of the plaintiff in this action to recover damages for personal injuries, says that a physician who was a witness for the defendant was required to answer, over objection, that he had been paid for his professional services rendered to the plaintiff by an insurance company. After the witness had left the stand, and both plaintiff and defendant had rested, counsel for the defendant moved that the jury be discharged, by reason of the fact that such testimony had been elicited, asserting that it had been brought out to prejudice the defendant before the jury, and inject a third party into the case. But this court regards the ruling of the trial court as having been manifestly correct. The physician had given testimony contradictory in many respects to that of the plaintiff's medical expert, and calculated to minimize the extent of the plaintiff's injuries, and thus materially reduce the amount of damages that he might recover. This court does not pretend to say which witness the jury should have believed, but, in the proper discharge of its duty of arriving at a finding of fact from such conflicting evidence, it was only fair and just that the jury should have been informed whom the physician represented, and what his real interest in the litigation was.

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of, Birmingham, April 17-20. Dr. D. L. Cannon, 519 Dexter Avenue, Montgomery, Secretary.

American Association for Thoracic Surgery, Washington, D. C., April 30-May 2. Dr. Ethan Flagg Butler, Sayre, Pa., Secretary.

American Association of Anatomists, Ann Arbor, Mich., April 5-7. Dr. Lewis H. Weed, Johns Hopkins Medical School, Baltimore, Secretary.

American Association of Pathologists and Bacteriologists, Washington, D. C., April 30-May 2. Dr. H. L. Kretschmer, 122 S. Michigan Avenue, Chicago, Secretary.

American Association of Pathologists and Bacterioloists, Washington, D. C., May 1-2. Dr. H. T. Karsner, 2109 Adelbert Road, Cleveland, Secretary.

American Bronchoscopic Society, Washington, D. C., April 30. Dr. Louis H. Clerf, 128 South 10th Street, Philadelphia, Secretary.

American Climatological and Clinical Association, Washington, D. C., May 1-2. Dr. A. K. Stone, Auburn Street, Framingham Center, Mass., Secretary.

American Dermatological Association, Washington, D. C. April 30-May 2. Dr. C. Guy Lane, 416 Marlborough Street, Boston, Secretary.

American Gastro-Enterological Association, Washington, D. C., April 30-May 1. Dr. W. J. Mallory, 1720 Connecticut Avenue, N. W., Washington, D. C., Secretary.

American Gynecological Society, Washington, D. C., April 30-May 2. Dr. Floyd E. Keene, Medical Arts Building, Philadelphia, Secretary.

American Laryngological Association, Washington, D. C., May 1-3. Dr. G. M. Coates, 1721 Pine Street, Philadelphia, Secretary.

American Laryngological, Rhinological and Otological Society, Washington, D. C., May 3-5. Dr. R. L. Loughran, 33 East 63d Street, New York, Secretary.

American Ophthalmological Society, Washington, D. C., April 30-May 2. Dr. Emory Hill, Professional Building, Richmond, Va., Secretary.

American Otological Society, Washington, D. C., April 30-May 1. Dr. T. J. Harris, 104 East 40th Street, New York, Secretary.

American Pediatric Society, Washington, D. C., April 30-May 2. Dr. H. C. Carpenter, 1805 Spruce Street, Philadelphia, Secretary.

American Pharmacological Society, Ann Arbor, Mich., April 12-14. Dr. E. D. Brown, University of Minnesota, Minneapolis, Secretary.

American Physiological Society, Ann Arbor, Mich., April 12-14. Dr. W. J. Meek, Science Hall, University of Wisconsin, Secretary.

American Society of Biological Chemistry, Ann Arbor, Mich., April 12-14. Dr. D. W. Wilson, University of Pennsylvania Medical School, Philadelphia, Secretary.

American Society of Clinical Investigation, Washington, D. C., April 30. Dr. J. T. Wearn, Boston City Hospital, Boston, Secretary.

American Society of Tropical Medicine, Washington, D. C., May 1-2. Dr. Benjamin Schwartz, P. O. Box 131, Pennsylvania Avenue Station, Washington, D. C., Secretary.

American Surgical Association, Washington, D. C., April 30-May 2. Dr. Lincoln Davis, 205 Beacon Street, Boston, Secretary.

Arizona State Medical Association, Tucson, April 19-21. Dr. D. F. Harbridge, Goodrich Building, Phoenix, Secretary.

Arkansas Medical Society, El Dorado, May 1-3. Dr. W. R. Bathurst, 810 Boyle Building, Little Rock, Secretary.

Association of American Physicians, Washington, D. C., May 1-3. Dr. J. H. Means, Massachusetts General Hospital, Boston, Secretary.

California Medical Association, Sacramento, April 30-May 3. Dr. Emma W. Pope, 593 Market Street, San Francisco, Secretary.

Congress of Physicians and Surgeons of North America, Washington, D. C., May 1-2. Dr. W. R. Steiner, 646 Asylum Avenue, Hartford, Conn., Secretary.

Federation of American Societies for Experimental Biology, Ann Arbor, Mich., April 12-14. Dr. E. D. Brown, University of Minnesota, Minneapolis, Secretary.

Florida Medical Association, Tampa, April 3-4. Dr. Shaler Richardson, 111 West Adams Street, Jacksonville, Secretary.

Louisiana State Medical Society, Baton Rouge, April 10-12. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 24-26. Dr. John T. King, Jr., 1211 Cathedral Street, Baltimore, Secretary.

North Carolina, Medical Society of the State of, Pinehurst, April 30-May 2. Dr. L. B. McBrayer, Southern Pines, Secretary.

Ohio State Medical Association, Cincinnati, May 1-3. Mr. Don K. Martin, 131 East State Street, Columbus, Executive Secretary.

Pacific Coast Oto-Ophthalmological Society, Santa Barbara, April 18-20. Dr. Walter F. Hoffman, 817 Summit Avenue, Seattle, Secretary.

South Carolina Medical Association, Columbia, April 17-19. Dr. E. A. Hines, Seneca, Secretary.

Tennessee State Medical Association, Nashville, April 10-12. Dr. H. H. Shoulders, Lambuth Building, Nashville, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in America for a period of three days. No foreign journals are available prior to 1921, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Hygiene, Baltimore

8: 1-124 (Jan.) 1928

Host-Parasite Relations Between Iodameba Williamsi and Certain Mammalian Hosts (Guinea-Pigs and Rats). S. C. Smith, Baltimore.—p. 1.
*Experimental Studies on Viability and Transmission of Trichomonas Hominis. R. Hegner, Baltimore.—p. 16.
*Significance of Age Distribution of Poliomyelitis: Evidence of Transmission Through Contact. W. L. Aycock, Boston.—p. 35.
Correlations Between Death Rate from Diabetes Mellitus and Other Demographic Factors. R. Jordan, New Haven, Conn.—p. 55.
Bionomics of North American Anophelines: Winter Activities of Anophelines in Coastal North Carolina (36 Degrees N. Lat.). M. C. Balfour, New York.—p. 68.
Two Species of Giardia from Rat. L. A. Potter, Philadelphia.—p. 77.
Effect of Bacillus Pyocyaneus on Cultures of Trichomonas Hominis. M. J. Hogue, Philadelphia.—p. 85.
New Species of Mosquitoes from Venezuela. H. G. Dyar and N. N. Tovar—p. 89.
*Reaction in Skin of Normal Rabbit Following Intradermal Injection of Material from Smallpox Lesions: Specificity of Reaction: Application as Diagnostic Test. N. E. McKinnon and R. D. Defries, Toronto.—p. 93.
*Laboratory Diagnosis of Smallpox Virus. R. D. Defries and N. E. McKinnon, Toronto.—p. 107.

Killing the Trichomonads.—Experiments with disinfectants reported on by Hegner indicate (1) that all specimens of *Trichomonas hominis* in fecal material are destroyed when subjected to 5 per cent and 2 per cent solutions of phenol (carbolic acid) for five minutes, but that some of them are able to withstand a 1 per cent solution for a similar period, and (2) that compound solution of cresol destroys all trichomonads in 2, 1 and 0.5 per cent solutions in five minutes.

Age Distribution of Poliomyelitis in Vermont.—Aycock points out that the age distribution of poliomyelitis in Vermont (for which actual figures were available) showed a greater preponderance of cases in the younger age groups in urban than in rural communities, the number of cases diminishing rapidly with increasing age. In a comparison of the age distributions in urban and rural populations of measles, diphtheria, and poliomyelitis, it was found that the incidence of the disease in the various age groups is directly proportional to concentration of the population. The fact that all three diseases possess the same age distribution phenomena is evidence that the mechanism involved is identical for each of these diseases. In measles it is clear that its age distribution is determined by immunity from an attack of the disease, while the age distribution of diphtheria is largely determined by subclinical immunity. The similarity of the age distribution of poliomyelitis to that of measles and diphtheria is therefore taken as evidence that immunity, largely subclinical, is likewise responsible for its age distribution. On this basis, the idea is set forth that the virus of poliomyelitis attains a distribution equal to that of measles and diphtheria, in the course of which the majority of persons become immunized either subclinically or through unrecognized attacks of the disease.

Diagnostic Test for Smallpox.—The intradermal injection of material from smallpox cases into normal rabbits evokes regularly a lesion having definite characteristics. The specificity of this reaction has been shown by the modified response of such inoculated rabbits to vaccine virus when applied to the skin. The intradermal injection of material from cases of chickenpox into normal rabbits fails to elicit such a reaction. Comparison of the lesions following the intradermal inoculation of test material into a normal rabbit and, at the same time, into a vaccine-immunized rabbit, is advocated by McKinnon and Defries as a reliable procedure for the diagnosis of smallpox.

Laboratory Test for Smallpox Virus.—According to Defries and McKinnon, the reaction in the skin of the vaccine-immunized rabbit following the intradermal injection of smallpox material may be useful in the diagnosis of smallpox, but it is so variable, both in occurrence and in character, that accurate interpretation is often impossible. The corneal reaction is specific, but positive results have been found by them in only about half the tests when known smallpox material was used. The intradermal injection of smallpox material into normal rabbits evokes regularly a definite, specific lesion. The development and retrogression of the lesion produced by the intradermal injection of smallpox material into the normal rabbit differs markedly from the course of the lesion similarly produced in the vaccine-immunized rabbit. The repeated intradermal injection of smallpox material into rabbits produces in them a definite immunity against vaccine virus. A laboratory test for smallpox virus is found in the development of the typical lesion following intradermal inoculation of smallpox material in the normal rabbit, contrasted with the response following a similar procedure in the vaccine-immunized rabbit.

American J. Obstetrics and Gynecology, St. Louis

15: 1-144 (Jan.) 1928

*Epidermidalization of Cervix Uteri: Its Relation to Malignancy. C. F. Fluhmann, San Francisco.—p. 1.
New Obstetric Forceps. L. G. Barton, W. E. Caldwell and W. E. Studdiford, New York.—p. 16.
Present Status of Therapy of Cancer of Uterus. J. O. Polak, New York.—p. 26.
Abdominal Reposition in Acute Inversion of Puerperal Uterus. J. L. Huntington, F. C. Irving and F. S. Kellogg, Boston.—p. 34.
Endocrine Therapy. R. T. Frank, New York.—p. 40.
Case of Recurrent Torsion of Fallopian Tube with Hematosalpinx. J. Casagrande, New York.—p. 49.
Case of Sympus Dipus. M. Dreyfuss, New York.—p. 52.
*Biochemical Studies of Human Semen: Relation to Mucus of Cervix Uteri. R. Kurzrok and E. G. Miller, Jr., New York.—p. 56.
Alleged Synergism of Magnesium Sulphate and Morphine. H. Beckman, Milwaukee.—p. 72.
Ovarian Dysfunction Dependent on Abnormalities of Ductless Glands. B. C. Hirst, Philadelphia.—p. 79.
Rupture of Uterus in Scar of Previous Cesarean Section Occurring Twice in Same Patient Within One Year. M. J. Gelpi, New Orleans.—p. 85.
Hernia Funiculi Umbilicalis: Three Cases. A. F. Hebert, New Orleans.—p. 86.
New Style Funnel for Use with Electric or Kieth Water Power Breast Pump. F. P. McNalley, St. Louis.—p. 89.

Epidermidalization of Cervix Uteri.—By epidermidalization is meant a process by which the normal cylindric epithelium of the cervix is replaced by a stratified squamous epithelium. Five theories have been suggested by Fluhmann to account for the exact mechanism involved in this change. It was found to occur in fifty-nine instances of chronic cervicitis from a series of 1,195 specimens of the cervix and in twenty-nine of 100 cervical mucous polypi. It was also noted in new-born cervices, and there are many references in the literature to the finding of squamous epithelium in the endometrium. At times the process may lead to the formation of atypical epithelial overgrowths, which may be termed "epidermoidalization." Careful study of serial sections and repeated biopsies may be necessary to differentiate these conditions from an early carcinoma. In rare instances, malignancy can be excluded, but certain features are present which may be considered as "precancerous." It is not certain that these really represent a transition from a benign to a malignant growth, and there is much evidence in support of the belief that most of these lesions would probably prove to be harmless.

Relation of Human Semen to Mucus of Cervix.—Kurzrok and Miller found that there is present in human semen a substance that dissolves human cervical mucus. The properties of this lytic substance suggest that it is an enzyme. Considerations are offered relating this substance to sterility and fertilization. Semen has a strong reducing action on thionin and the possible significance of this reaction is discussed. The reduction phenomenon of semen may have a bearing on the oxidative processes following fertilization. Semen contains neither oxidase nor glutathione.

American J. Roentgenol. & Rad. Therapy, New York

19: 1-100 (Jan.) 1928

*Treatment of Brain Tumors by Irradiation During Past Thirteen Years. H. K. Pancoast, Philadelphia.—p. 1.
Radium in Treatment of Leukemia. W. L. Brown, Chicago.—p. 15.
Roentgenologic Manifestations of Primary Carcinoma of Lung: I. Parenchymal Type. B. R. Kirklin and R. Paterson, Rochester, Minn.—p. 20.
*Diverticula of Thoracic Esophagus. L. A. Smith, Indianapolis.—p. 27.
Roentgenologic Consideration of Mediastinum. W. W. Belden, New York.—p. 36.
Use of Amyl Nitrite as Antispasmodic in Roentgen-Ray Examination of Gastro-Intestinal Tract. G. W. Holmes and R. Dresser, Boston.—p. 44.
Standardization of Roentgen-Ray Dose. O. Glasser and U. V. Portmann, Cleveland.—p. 47.
Influence of Roentgen Rays on Gastric Secretion. J. T. Case and W. N. Boldyreff, Battle Creek, Mich.—p. 61.
Hourly Variations in Effect of Equal Roentgen-Ray Doses on Growth of Vicia Faba Seedlings. M. C. Reinhard and K. L. Tucker, Buffalo. —p. 71.

Treatment of Brain Tumors by Irradiation.—One hundred and thirty-six intracranial tumors have been treated by Pancoast by irradiation over a period of thirteen years. Of these, forty-six were pituitary growths, and are not reported. Of the extrasellar tumors, statistics are available in only the cerebellar group comprising forty-eight patients. Of these, twenty-five are known to be alive for varying periods of a few months to thirteen years. Pancoast states that uniformity of irradiation technic is absolutely essential and does not exist at the present time. Much treatment is carried out in a more or less haphazard manner. Brain tumors must be treated according to the same general principles that apply to tumors elsewhere, but with due regard for the fact that they are in the brain. A proper combination of external irradiation and radium implantation may be found necessary in many tumors if histologic prognostication becomes a possibility. Apparent success ascribed to irradiation may frequently be the result of the operative procedure acting as a decompression.

Diverticula of Thoracic Esophagus.—Nine instances of diverticula of the thoracic esophagus are described by Smith, in three of which the sacculations were multiple. The fact that in six cases symptoms were absent indicates that the condition is probably rather frequent but is not diagnosed. In only one patient was there any evidence whatever of cardiospasm, which has been considered an important causative factor. Two additional instances of nontraumatic paraesophageal gastric hernia are described, associated with esophageal diverticula.

Archives of Pathology & Lab. Medicine, Chicago

5: 1-194 (Jan.) 1928

*Hypertrophy of Muscle in Suprarenal Vein in Hypertension. M. A. Goldzieher and I. Sherman, New York.—p. 1.
*Fat Content of Pathologic Thyroids in Man. R. H. Jaffé, Chicago.—p. 13.
*Vascular Lesions of Portal Cirrhosis. A. H. McIndoe, Rochester, Minn. —p. 23.
*Sixty-Three Deaths from Carbon Monoxide Poisoning in Private Garages. W. D. McNally, Chicago.—p. 43.
Scopometry: System for Optical Measurement and Study of Colloids and Other Dispersions. W. G. Exton, New York.—p. 49.
Aid in Testing Gastric Contents for Lactic Acid. E. M. Watson, London, Ont.—p. 66.
Focal Infection and "Elective Localization." W. L. Holman, Toronto. —p. 68.

Hypertrophy of Muscle in Suprarenal Vein in Hypertension.—The musculature of the suprarenal veins was examined and measured by Goldzieher and Sherman in cases of hypertension, in cases of renovascular disease without evidence of hypertension and in cases without either hypertension or renovascular impairment. In the first and the second groups the musculature was hypertrophied, as compared to that of the third group. Both the musculature of the central vein and the single muscle bundles of the small venules participated in the hypertrophy. Injection of the suprarenals through the central veins in patients with hypertension revealed a different distribution of the injected dye from that in the controls.

Fat Content of Pathologic Thyroids.—The material studied by Jaffé consisted of two parenchymatous goiters (adolescent type), twelve colloid goiters, twenty exophthalmic goiters, twelve adenomatous goiters, three adenomatous and exophthalmic goiters, eight atrophic glands, one acute purulent thyroiditis, one chronic thyroiditis (Riedel's struma), one tuberculosis of the thyroid, one malignant adenoma and two adenocarcinomas. Simple, diffuse, parenchymatous and colloid goiters do not markedly differ in their lipoid content from the normal thyroid. Adenomas are usually rich in fat. Relations do not exist between the fat content of the adenomas and that of the remaining thyroid tissue. Inflammatory changes affect the lipoid segregation and excretion of the thyroid epithelium only when they lead to a destruction of the vesicles. In exophthalmic goiters the fat is usually decreased. This decrease is most pronounced in the areas composed of vacuolated cells. Extrusion of lipoid droplets into the vesicular lumen does not occur. The malignant epithelial tumors of the thyroid contain only fat that results from degenerative changes.

Vascular Lesions of Portal Cirrhosis.—The changes that occur in the portal circulation and particularly in the intrahepatic vascular system as a result of portal cirrhosis are demonstrated by McIndoe. An attempt is made to correlate the vascular alterations with those in the hepatic parenchyma, emphasis being laid on the physical and mechanical factors involved in the development of ascites. Progressive dissociation of the portal venous and hepatic arterial circuits is found of such a nature that the portal blood is diverted to collateral channels at an earlier stage of the disease than the arterial blood. The hepatic cells are thus divorced from their normal portal blood supply and are ultimately nourished almost entirely by the hepatic artery. Ascites is considered to be associated with a lack of balance between the progressive sclerosis of the intrahepatic portal radicles and the rate of development of the collateral pathways, while hepatic insufficiency is more closely related to the subsequent obliteration of the persistent arterial connections. The duration of the period between completion of the two processes depends on the rate of intrahepatic sclerosis and is of great importance in treatment. Ascites, per se, is amenable to medical and surgical treatment but when complicated with signs of hepatic insufficiency, as evidenced by retention of dye in the absence of jaundice, it is of much graver import. It is an indication that the remaining arterial supply of the hepatic cells has been seriously reduced. The possibilities of various forms of treatment are discussed with particular regard to bleeding esophageal varices.

Carbon Monoxide Poisoning.—McNally analyzes fifty-three deaths caused by the inhalation of exhaust gas of automobiles in closed garages. A concentration of 2.0 per cent carbon monoxide can be easily obtained in a closed garage when the motor is running. To inhale as much as 0.2 per cent of carbon monoxide is dangerous. The action of the exhaust gas is due chiefly to the formation of carbon monoxide hemoglobin. Carbon monoxide can be removed from the blood of the patient by replacing the carbon monoxide with the oxygen of the air, pure oxygen or oxygen with 5 per cent carbon dioxide. Deaths due to carbon monoxide in garages can be prevented by providing adequate ventilation, with the doors and windows wide open, when one is working on the car with the motor running, or by connecting the exhaust pipe to an outside vent.

Journal of Industrial Hygiene, Baltimore

10: 1-32 (Jan.) 1928

How Far Should Industry Go in Caring for Cases of Illness Not Due to Employment? R. P. Knapp, South Manchester, Conn.—p. 1.
Apparatus for Artificial Respiration: Barospirator of Professor T. Thunberg. C. K. Drinker, Boston.—p. 7.
Quantitative Measurements of Inhalation, Retention and Exhalation of Dusts and Fumes by Man: I. P. Drinker, R. M. Thomson and J. L. Finn, Boston.—p. 13.

Journal of Pharmacol. & Exper. Therap., Baltimore

32: 161-240 (Jan.) 1928

Modification of Brodie and Russell's Method for Determination of Blood Flow. A. E. Livingston, Philadelphia.—p. 161.
Application of Venturi Meter to Measurement of Blood Flow in Vessels. G. W. Wagoner and A. E. Livingston, Philadelphia.—p. 171.
*Effects of Vasoconstrictor Substances on Kidney. A. E. Livingston, Philadelphia.—p. 181.
Color Vision After Intravenous Injection of Santonin. W. Marshall, Aberdeen, Scotland.—p. 189.

Azo Dyes Containing Antimony in Treatment of Trypanosomiasis. F. Dunning and D. I. Macht, Baltimore.—p. 205.
Respiratory Stimulants in Acute Cocaine Poisoning in Rabbits. C. A. Dragstedt and V. F. Lang, Chicago.—p. 215.
*Influence of Quinidine on Cardiac Irregularity Produced by Digitalis. C. C. Haskell, Richmond, Va.—p. 223.
Studies in Protoplasm Poisoning: Recovery. L. F. Shackell, Salt Lake City.—p. 237.

Effects of Vasoconstrictor Substances on Kidney.—Results are presented by Livingston which confirm the report of Richards and Plant that minute doses of certain vasoconstrictor drugs may produce simultaneously a rise in blood pressure, an increase in kidney volume, a decrease in the volume flow of blood through the kidney, and diuresis. This coincidence is regarded as evidence in favor of glomerular filtration.

Effect of Quinidine on Cardiac Irregularity Produced by Digitalis.—Haskell asserts that the ability of quinidine to restore regular cardiac action when this has been disturbed by toxic doses of digitalis is due partly to the action on the vagal endings; and, to a less extent, to a direct influence on the myocardium.

Journal of Preventive Medicine, Baltimore

2: 1-77 (Jan.) 1928

*Measles in Institutions for Children: I: Mortality. E. S. Godfrey, Jr., Albany, N. Y.—p. 1.
*Id.: II: Use of Convalescent Serum. E. S. Godfrey, Jr., Albany, N. Y.—p. 11.
*Precipitin Test in Experimental Trichiniasis. G. W. Bachman, Chicago.—p. 35.
Typhoid Epidemic, Santa Ana, Calif. C. H. Halliday and M. D. Beck, Berkeley, Calif.—p. 49.
*Effect of General Irradiation with Ultraviolet Rays on Frequency of Colds. G. H. Maughan and D. F. Smiley, Ithaca, N. Y.—p. 69.

Mortality of Measles in Institutions.—Godfrey states that deaths from measles in institutions for children and for mental defectives have been responsible for from 3 to 26 per cent of the annual mortality from this cause in New York State, exclusive of New York City. The average for the eight years from 1915 to 1922 was 10 per cent. Outbreaks accompanied by a large number of deaths have occurred only in institutions caring for children under 2 years of age and in institutions for mental defectives. In the institutions other than those for mental defectives in which outbreaks with a high mortality occurred, a large percentage of the small children were foundlings and illegitimate children, many of them marasmic, rachitic or otherwise undernourished. The mortality rate from other causes than measles was excessively high. The institutions were frequently overcrowded. In some instances the personnel was insufficient to carry out the routine properly, and was decidedly inadequate, both in numbers and in training, to cope with an epidemic of measles. Outbreaks in institutions for mental defectives resulted in a large number of deaths when the disease attacked those of low grade mentality or when the outbreak was concurrent with other respiratory infections. Outbreaks in institutions for adults and older normal children are not characterized by exceptionally high fatality rates. The number of deaths occurring in them averaged less than two a year for the period from 1915 to 1922 and they have not affected adversely, to any appreciable extent, the mortality or fatality rates of the state as a whole. The average annual measles death rate for 1915 to 1922 among normal institutional children from 5 to 14 years old was less than twice as high as for the state as a whole, while in children less than 5 it was more than twenty-six times as high.

Use of Convalescent Serum in Treatment of Measles.—In forty children's institutions in New York, there were 945 cases of measles and fifty-one deaths. The highest fatality rate was in children from 6 to 11 months old, and after this age it declined rapidly. Seventy-seven per cent of the deaths were in children under 3 years of age. The fatality rate in children under 3 was almost twice as high for untreated children as for those given convalescent serum (seventy-four cases with nine deaths as against sixty-five cases with four deaths). On the whole, however, the figures for the combined years 1923 and 1924 for children under 3 are slightly in favor of the patients not treated with serum. Godfrey believes that convalescent serum will favorably influence the mortality if administered during the incubation period, but that it is inadequate under exceptionally adverse conditions—at least in the dosage available. He recommends giving four or five times the ordinary dosage if sufficient serum could be obtained. In its prophylactic properties, the serum was a decided disappointment.

Precipitin Test in Trichiniasis.—The presence of precipitins in infected animals raises the question of the possibility of the precipitin test as a diagnostic aid in human trichiniasis. A diagnosis, however, is generally desired during the early stages of the disease and so far, in animal work, precipitins have not been demonstrable until the thirtieth day. Consequently, Bachman says that the method will probably not be of practical use for diagnosis except in cases of established infection.

Effect of Ultraviolet Ray on Frequency of Colds.—Maughan and Smiley found that a ten-minute irradiation of the naked body with the ordinary mercury vapor lamp at a distance of 30 inches once a week throughout the dark period of the year resulted, among four groups of persons (fifty-eight), in a reduction in the frequency of colds of from 27.9 to 40.3 per cent.

Maine Medical Association Journal, Portland

19: 1-17 (Jan.) 1928

Diagnosis of Carcinoma of Colon and Rectum. D. F. Jones, Boston.—p. 1.
Endoscopy in Diseases of Air and Food Passages. J. L. Johnson, Bangor.—p. 9.

Minnesota Medicine, St. Paul

11: 67-130 (Feb.) 1928

Fractures About Ankle Joint Involving Tibia and Fibula. J. M. Hitzrot, New York.—p. 67.
*Achylia and Effects of Histamine. C. B. Wright, Minneapolis.—p. 73.
Acute Pancreatitis. J. L. Delmore, Roseau.—p. 80.
Postoperative Ileus. C. O. Estrem, Fergus Falls.—p. 83.
*Acute Appendicitis in Young Children. R. L. J. Kennedy, Rochester.—p. 88.
Migratory Consumptive Problem. E. S. Mariette, Oak Terrace.—p. 91.
Preparation of Prostatic Patients for Operation. F. R. Wright, Minneapolis.—p. 99.
Cardiac Neurosis. F. A. Willius, Rochester.—p. 102.
*Malaria Treatment of Paresis. J. C. Michael, Minneapolis.—p. 105.

Incidence of Achylia in Children.—Among 250 children between the ages of 6 and 14, Wright found four cases of achylia. Two of these children were examined a year later and in one of them there was no free hydrochloric acid and in the other only a slight amount. The other two were not reexamined. Eighteen patients with achylia were examined both by the injection of histamine and by the estimation of total chloride. None of these cases showed any free hydrochloric acid by fractional examination. In five of the cases, however, there was a definite secretion of acid following the injection of histamine. In the remaining thirteen cases there was no free hydrochloric acid. In only two of the five cases showing free hydrochloric acid after histamine did the acid reach a normal limit. The fact that one can get free hydrochloric acid in some cases of achylia by the injection of histamine is of interest.

Analysis of Appendicitis in Children.—The mortality rate for the group of 288 cases of acute appendicitis analyzed by Kennedy was 2.25 per cent. Perforation occurs more frequently in the earlier years, in inverse ratio to the age of the patient. Kennedy says that if a child has an acute complaint, referable to the abdomen, acute appendicitis should be suspected; the child should be watched closely, examined carefully for evidence of a diseased appendix and treated promptly when positive signs are found.

Malaria Treatment of General Paralysis.—The clinical results obtained by treating thirty-five general paralytic patients with induced malaria are reported on by Michael. Fourteen cases were of the advanced institutional type; twenty-one were of the less advanced stages of the disease. The diagnosis of general paralysis, the principles of malaria therapy, necropsy data and serologic changes in treated cases are discussed. Patients in the advanced stages of the disease were less favorably influenced than the series of patients in

the relatively less advanced stages of the paretic disease. This latter series presented, after two years and more, a remission rate of 64 per cent.

Missouri State M. Association Journal, St. Louis

25: 1-42 (Jan.) 1928

*Acid-Base Balance in Children with Reference to Intestinal Disturbances. E. B. Woods, St. Louis.—p. 1.
*Benign Prostatic Hypertrophy. G. H. Ewell, Madison, Wis., and F. M. McCallum, Kansas City.—p. 9.
Chronic Cervicitis. L. Dorsett, St. Louis.—p. 14.
Automatic Bladder. G. W. Robinson, Kansas City.—p. 15.
*Sodium Chloride Intravenously in Treatment of Bromism. G. V. Stryker, St. Louis.—p. 18.
*Congenital Familial Atrophy of Nails. A. L. Walter, Sedalia, and W. L. Bradford, Rochester, N. Y.—p. 20.

Acid-Base Balance in Children.—There are three theories as to the cause of infantile diarrheas of the unknown or noninfectious nature; namely, decrease in the acidity of the stomach and duodenum, anhydremia, and production of a definite toxin from the intermediary products in the bacterial action on the protein in the intestine. Treatment of acidosis must be first directed to the prevention of a further production of more acids; second, to the replenishing of alkali reserve; third, to the elimination of the acids and their salts, and fourth, to the treatment of the underlying factors, whether they are acute infections, starvation or organic disease. Woods stresses the fact that citric acid milk is advocated as a corrective in deficient gastric acidity because of its vitamin content and its stimulating power to oxidation processes within the body.

Benign Hypertrophy of Prostate.—Among 125 cases reported by Ewell and McCallum, there were five deaths, a mortality of 4 per cent. The causes of death were: shock twenty-four hours after a suprapubic cystotomy; angina pectoris; diabetes; uremia, and pulmonary embolism. All the operations were done by the suprapubic route and, with the exception of six cases, by the two stage method. The authors consider adequate bladder drainage and complete hemostasis as the two chief factors contributing to this low mortality rate.

Treatment of Bromism.—In the two cases of bromism reported by Stryker, physiologic sodium chloride solution was injected intravenously. Prompt recovery ensued in both cases.

Congenital Familial Atrophy of Nails.—In a series seen by Walter and Bradford of seventy-three persons representing five generations, forty-six were normal and twenty-seven defective. Of the defective persons, eighteen were females and nine were males. Twenty persons had the defect limited symmetrically to the nails of the thumbs and index fingers, while seven had all nails involved. Moreover, all of these seven appeared in the last three generations. There was no associated dystrophy of the hair, no evidence of cutaneous disease, and no hypothyroidism in these cases. There was nothing to indicate organic or functional disorders of the nervous system. The blood Wassermann reaction in several members of the family was negative. A search for tinea in the scrapings from the nails was also negative.

Northwest Medicine, Seattle

27: 1-56 (Jan.) 1928

Methods for Control of Scarlet Fever. G. F. Dick, Chicago.—p. 1.
*Intermittent Duodenal Stenosis. R. Hayes and A. B. Shaw, Longview, Wash.—p. 6.
Gastro-Intestinal Symptoms from Lesions of Urinary Tract. C. F. Engels, Tacoma, Wash.—p. 16.
Pulmonary Tuberculosis: Treatment. E. W. Hayes, Monrovia, Calif.—p. 19.
Nontuberculous Pulmonary Abscess: Its Increasing Frequency. E. A. Pierce, Portland, Ore.—p. 24.
Tumors of Thorax. C. R. Castlen, Seattle.—p. 27.
Thoracoplasty: Indications and After Care. F. Slyfield, Seattle.—p. 30.
Anatomy of Our Social Life. T. W. Todd, Cleveland.—p. 33.
Minot and Murphy Diet in Pernicious Anemia. H. H. Kretzler, Edmonds, Wash.—p. 37.
Senile Cataract: Its Medical and Surgical Treatment. J. L. McCool, Portland, Ore.—p. 40.
Nonspecific Urethritis in Male. W. R. Jones, Seattle.—p. 43.

Intermittent Duodenal Stenosis.—Hayes and Shaw insist that the roentgenogram is by far the most important factor, if not the only means of diagnosis, and that it should show in the vast majority of cases whether intermittent duodenal stenosis is or is not present. The prevailing clinical diagnoses made in these cases are usually cholecystitis, gastric or duodenal ulcer, appendicitis, constipation and gastric neurosis, and, very recently, migraine. They report on thirty-eight cases. In nineteen cases in which operation was performed, no other pathologic change was found than that due to mesenteric pressure or membranes. Six of the patients were children of the so-called cyclic vomiting type. Two adults came to operation, neither of whom had responded to the medical regimen. In one, a cecopexy and colopexy were performed. At operation on the other, a dense, fibrous band was found holding the hepatic flexure down to the ileocecal region. This was severed before the normal anatomy could be restored and the operation completed by doing a cecopexy and colopexy. The results of both operations after from twelve to fifteen months, respectively, were decidedly favorable, both patients being back at work and not complaining of any symptoms.

24: 89-168 (Feb.) 1928

Etiology of Postoperative Abscess of Lung. E. C. Cutler, Cleveland.—p. 109.
Chronic Recurring Headaches from Viewpoint of Gastro-Enterologist. J. Forman, Columbus.—p. 115.
Acute Mastoiditis. M. E. Scott, Massillon.—p. 122.
Acrodynia. A. G. Helmick, Columbus.—p. 123.
Saline Wheal Test as Measure of Blood Supply in Arterial Disturbances of Extremities. W. G. Stern, Cleveland.—p. 126.
*Acute Appendicitis with Spontaneous Rupture of Appendiceal Artery: Traumatic Appendicitis: Two Cases. D. H. Downey, Dover.—p. 129.

Rupture of Appendical Artery: Traumatic Appendicitis.—Downey reports a case of ruptured appendical artery in which he operated during the second attack, the first attack having occurred two days previously. He assumes that the artery had ruptured at the first attack as evidenced by the presence of old clots. This hemorrhage ceased spontaneously, only to renew itself two days later, and this time it was discovered when operating for appendicitis. Downey also reports what he believes to be a true traumatic appendicitis resulting from a severe blow over the appendix. In this case the entire wound opened spontaneously on the tenth day. No trace of suture material was visible. The premature absorption of the catgut is explained by the presence of an excess of proteolytic enzymes in the tissues of the abdominal wall as a result of the bruising of the muscles from the blow.

Ohio State Medical Journal, Columbus

24: 1-88 (Jan.) 1928

Medical Treatment of Peptic Ulcer. A. J. Beams, Cleveland.—p. 21.
Fractures of Neck of Femur. J. C. Walker, Dayton.—p. 26.
*Mental Disturbances Associated with Pregnancy. C. W. Stone and L. J. Karnosh, Cleveland.—p. 29.
*Use of Tuberculin in Ocular Tuberculosis. C. King, Cincinnati.—p. 32.
Present Status of Knowledge of Pituitary Body. C. E. Locke, Jr., Cleveland.—p. 37.
*Scarlet Fever Immunization. B. Goldberg, Cincinnati.—p. 44.
Medical Social Service. L. L. Bigelow, Columbus.—p. 47.

Mental Disturbances Associated with Pregnancy.—Of eighty-five cases of mental disturbance associated with pregnancy and the puerperium investigated by Stone and Karnosh, thirty-eight were classified as dementia praecox; thirty as manic-depressive psychosis; sixteen as toxic-infectious psychosis; and one as a psychosis associated with cardiovascular disease. Of this number, thirty-nine patients went home improved, and seven went home unimproved; of these five later improved, one went to a state hospital, and one could not be followed; thirty-one were transferred to other psychiatric institutions, and eight died. Twenty-three of these patients had a family history of mental disease or chronic alcoholism. Forty-four had mental disturbance in association with the first pregnancy. In twenty-five patients there was a history of previous attacks of severe mental disturbance associated with earlier pregnancies. In thirty instances, mental disturbance was present during pregnancy, and in thirty-four instances, the mental disturbance appeared within one week of childbirth. In this series of eighty-five patients there were twelve patients who threatened or actually attempted suicide.

Use of Tuberculin in Ocular Tuberculosis.—King believes that tuberculosis plays a more important etiologic rôle in ocular disease than has hitherto been believed in this country,

and that tuberculin, when properly employed, is a therapeutic aid of the highest value in tuberculosis involving the eye.

Scarlet Fever Immunization.—Two outbreaks of scarlet fever in two institutions for children are analyzed by Goldberg. There was a uniform mildness of all cases of scarlet fever encountered in the epidemic. The Dick test proved an invaluable agent in determining susceptibility or immunity to scarlet fever. It was of great help in handling the epidemic. No child with a negative Dick reaction developed scarlet fever. The passive immunity conferred by the injection of scarlet fever antitoxin prevented the occurrence of new cases for ten days. It did not affect the severity of the disease occurring after that time. After twenty-eight days, only thirty-eight of seventy-six children given the scarlet fever antitoxin had a negative Dick test, while thirteen of them had developed scarlet fever. Active immunization by use of Larson's detoxified toxin seemed to give equal satisfaction in preventing a threatened epidemic in another group. One hundred and fifty-nine days after the first dose, 81 per cent of those originally giving positive reactions to the Dick test were still negative. In another group of fifty-six children who received two doses, 82 per cent continued to show a negative reaction after a period of ten months.

Oklahoma State M. Association Journal, Muskogee

21: 1-26 (Jan.) 1928

Anomalous Conditions in Kidney, Ureter and Bladder. W. J. Wallace and S. F. Wildman, Oklahoma City.—p. 1.
Pernicious Anemia. L. D. Thompson, St. Louis.—p. 5.
Treatment of Individuals Versus Treatment of Diseases. C. M. Pounders, Oklahoma City.—p. 12.

Radiology, St. Paul

10: 93-184 (Feb.) 1928

Scientific Basis of Phototherapy. H. D. Griffith, Aberdeen, Scotland, and J. S. Taylor, Manchester, England.—p. 93.
Methods of Measuring Ultraviolet Radiation. W. W. Coblentz, Washington, D. C.—p. 116.
Roentgenographic Measurement of Cardiac Output in Man. F. J. Hodges, Madison, Wis.—p. 122.
Pancreatic Lithiasis. S. J. Seeger, Milwaukee.—p. 126.
Value of Lateral Exposure in Roentgen-Ray Examination of Chest. J. F. Chapman, San Francisco.—p. 139.
Differentiation of Osteitis Deformans and Osteoplastic Metastatic Carcinoma. C. G. Sutherland, Rochester, Minn.—p. 150.
Acute Pleural Empyema. R. B. Bettman and R. A. Arens, Chicago.—p. 153.
Nonopaque Foreign Bodies in Air Passages. R. G. Allison and K. Phelps, Minneapolis.—p. 157.
Case of Colloid Carcinoma of Cecum. W. W. Belden, New York.—p. 160.
Gastric Defect Produced by Cholecystogastrostomy. R. P. O'Bannon, Fort Worth, Texas.—p. 162.
Fenestrated Shield for Roentgenography of Nasal Accessory Sinuses. J. D. Blocker, Rochester, Minn.—p. 163.

Tennessee State M. Association Journal, Nashville

20: 301-339 (Jan.) 1928

Bone Tumors. H. G. Hill and J. Penn, Memphis.—p. 301.
Osteomyelitis. R. C. Robertson, Chattanooga.—p. 309.
Tularemia. H. C. Stewart, Nashville.—p. 315.
Hemolytic Jaundice. W. C. Dixon, Nashville.—p. 319.
Endoherniorrhaphy for Oblique Inguinal Hernia. W. M. McCabe, Nashville.—p. 323.

Texas State Journal of Medicine, Fort Worth

23: 563-632 (Jan.) 1928

Modern Methods of Treatment and Results in Cancer of Bladder. B. Lewis and G. Carroll, St. Louis.—p. 574.
*Hematuria: 500 Cases. R. E. van Duzen, Dallas.—p. 577.
Stones in Prostate and Seminal Vesicles. J. L. White, Houston.—p. 581.
Persistent or Recurrent Pyuria in Infants and Children. J. M. Venable, San Antonio.—p. 583.
Differential Diagnosis of Rectal Cancer. C. Rosser, Dallas.—p. 585.
*Value of Erythrocyte Sedimentation Rate in Treatment of Cancer. C. F. Lehmann, San Antonio.—p. 588.
Blood Transfusion from Standpoint of Pathologist. W. W. Coulter, Houston.—p. 592.
Electrosterilization of Tonsils. W. L. Cahall.—p. 594.
*Giardiasis: Fifteen Cases. C. W. Stevenson, Wichita Falls.—p. 596.
Importance of History of Heredity and Environment in Examination of Applicants for Employment. J. S. Turner, Dallas.—p. 599.
Early Diagnosis of Pulmonary Tuberculosis. R. B. Walker, Sanatorium.—p. 603.

Hematuria.—The source of the hemorrhage in these 500 cases reported by van Duzen was: urethra, thirty-eight cases; prostate, fifty-nine cases; bladder, eighty-two cases; ureter, seventy-five cases, and kidney, 172 cases. In two cases it resulted from the use of a proprietary cough lozenge containing chloroform, capsicum, cubeb and menthol. The urine contained many flakes of necrotic tissue and bright red blood. Lime liniment (carron oil) was the causative agent in one case, and turpentine in another. The cystoscopic appearance of the bladder in the last two cases showed intense injection of the mucosa with many areas of submucous hemorrhage. Pregnancy existed in forty-two cases; focal infection in twenty-eight; syphilis in twelve, and pernicious anemia in seven. Three hundred and nineteen patients required treatment other than medical.

Erythrocytes Sedimentation Rate as Index of Response to Treatment in Cancer.—Lehmann endorses the value of this test as an index of a patient's response to roentgen-ray or radium therapy, and considers it therefore a valuable aid to prognosis in the treatment of cancer. It is a measure of a patient's resistance, and therefore will probably be found a helpful aid in determining toleration to roentgen-ray or radium treatment. It will be found helpful in differential diagnosis.

Treatment of Giardiasis.—In the fifteen cases reported by Stevenson, neoarsphenamine alone or combined with acetarsone has proved a very efficient treatment.

U. S. Naval Medical Bulletin, Washington, D. C.

26: 1-216 (Jan.) 1928

Physiology of Respiration in Relationship to Problems of Naval Medicine. E. F. Du Bois.—p. 1.
Fractures. G. F. Cottle.—p. 16.
Practical Therapy in Dermatology. R. L. Sutton.—p. 27.
Habitability of Submarines. D. N. Carpenter.—p. 31.
Acute Gingivitis Associated with Fusiform Bacilli and Spiral Forms. C. H. Mack.—p. 40.
Gallbladder Surgery. R. Smith.—p. 55.
*Antityphoid Vaccination in U. S. Navy. J. C. Pryor.—p. 57.
Aviation Crashes at Pensacola: 1927. J. D. Benjamin.—p. 63.
Eye Examination as Factor in Reduction of Industrial Accidents. J. W. Brewster.—p. 69.
*Sarcoma of Femur. P. F. Dickens and G. G. Herman.—p. 73.
Leukocytosis in Early Diagnosis of Cerebrospinal Fever. P. Richmond, Jr.—p. 77
Infant Feeding in Tropics. G. F. Cooper.—p. 79.
*Tabes Diabetica. F. E. Angle.—p. 81.
*Tuberculosis with Concurrent Neoplasm: Case. C. R. Wilcox.—p. 85.
Leukemia: Three Cases. J. B. Gordon.—p. 92.
*Treatment of Gonorrheal Ophthalmia. E. C. Ebert.—p. 99.
*Pernicious Anemia: Unusual Case. R. Krohn.—p. 102.
Nephritic Diazo Reaction: Cases. W. J. N. Davis, Jr.—p. 105.

Compulsory Antityphoid Vaccination. — As antityphoid inoculation confers immunity, Pryor wonders whether we are not remiss in not requiring compulsory antityphoid inoculation in communities where typhoid is endemic.

Sarcoma of Femur.—Dickens and Herman report a case of osteogenic sarcoma of the lower end of the femur which apparently followed an accident sustained during a football game.

Tabes Diabetica.—The case of tabes reported by Angle was definitely shown to be caused by the toxins of severe diabetes mellitus. The severe nervous symptoms in this case followed the taking of a diet high in fats with a dextrose-fatty acid ratio of 2.6 for a period of more than two years. After the patient was placed on a Joslin diet, with a dextrose-fatty acid ratio of 0.98, the nervous system markedly improved.

Tuberculosis and Teratoma Testis.—In December, 1921, Wilcox's patient was operated on for a tuberculous abscess of the sternum. A roentgen-ray examination of the chest showed infiltration at the left hilum extending upward and at the right hilum extending outward which was suggestive of tuberculosis. In May, 1924, he was readmitted because of swelling of the right testis. An orchidectomy was performed. The tumor proved to be a teratoma testis (embryonal carcinoma). In the interval between his discharge from the hospital in 1924 and his last admission in 1927, the patient received radium treatment over the right part of the abdomen and roentgen-ray treatment of glands in different parts of the body. The radium treatment totaled 35,000 millicurie hours. The roentgen-ray treatments were given once a week every other three months. When the patient was admitted to the hospital in March, 1927, his symptoms pointed toward cerebromeningeal irritation and involvement of the bases of

the lungs, and toward some pathologic process in the upper part of the abdomen. The definite history of a malignant teratoma testis, and of a series of cold abscesses with a persistent drainage sinus in the right pectoral region, points to a metastatic carcinomatous process or a generalized tuberculosis as the most probable etiologic factor.

Treatment of Gonorrheal Ophthalmia.—Of ninety-two patients coming under Ebert's observation, forty-one received the combined treatment of subcutaneous and intramuscular injections of milk, in addition to local treatment with mild silver protein and mercurochrome-220 soluble. Twenty-six received local treatment alone every two hours with boric acid irrigation, followed by instillation of mild silver protein. Twenty-five patients were used as controls, receiving various treatments. Milk injection apparently did not have any therapeutic value. Combined with local treatment, milk injection did not have any advantage over local treatment alone.

Pernicious Anemia with Nephritis and Syphilis.—The unusual feature in Krohn's case was the association of pernicious anemia with both chronic nephritis and syphilis.

U. S. Veterans' Bureau M. Bull., Washington, D. C.

4: 1-86 (Jan.) 1928

Cardiac Disorders of War Veterans. L. T. Gager, Washington, D. C.—p. 1.
*Syphilis and Heart Disease. P. Morrison, Memphis, Tenn.—p. 6.
Value of Blood Pressure in Diagnosis. J. H. Nesbitt, Dallas, Texas.—p. 12.
*Abuse of Diagnosis of Neurosyphilis. F. S. Salisbury, Camp Custer, Michigan.—p. 15.
Neurasthenic Types. R. H. Rea, Seattle.—p. 18.
Analysis of 100 Cases of Thoracotomy for Empyema Complicating Pneumonia. H. Freed, Dwight, Ill., S. W. Haley, San Antonio, Texas, and W. O. Stephenson, Dallas, Texas.—p. 22.
*Changes in Blood After General and Local Anesthesia. G. H. Garrett, Portland, Ore.—p. 27.
Pellagra. J. E. Sparks, San Antonio, Texas.—p. 31.
Interpretation of Dental Roentgenograms. A. J. Trainor, St. Cloud, Minn.—p. 35.
Photograph of Pneumothorax on Postmortem. G. E. Lentine, Castle Point, N. Y.—p. 38.
Papilloma of Bladder with Absence of Subjective Symptoms in Patient Suffering from Dementia Praecox. H. D. Jonez, American Lake, Washington, D. C.—p. 40.
Carcinoma of Descending Colon in Young Adult. D. Kaplan, Chicago.—p. 42.
Standardization of Clinical Laboratory Work in Hospitals and Regional Offices. P. B. Matz.—p. 46.

Syphilis and Heart Disease.—Morrison reports five cases of tertiary syphilis with myocarditis. All were of long standing with marked decompensation. One patient had an aneurysm of the abdominal aorta which was not definitely diagnosed. Aortitis was present in two of the cases. Morrison urges that a more careful study of the cardiovascular system be made in all syphilitic persons.

Abuse of Diagnosis of Neurosyphilis.—Salisbury suggests that such an undesirable diagnosis as neurosyphilis should not be given unless it has been definitely proved. The consideration of other conditions causing similar manifestations will improve diagnostic ability and may in many instances avoid embarrassing social and family difficulties. Five illustrative cases are cited.

Blood Changes After Anesthesia.—The blood in seventy-seven patients operated on under a local anesthesia and in twenty-six patients operated on under ether anesthesia was examined by Garrett. He says that the leukocytosis appearing after operation and ascribed by various observers to the operation is due largely to the anesthesia and not to the operative procedure. There is a personal equation that affects the blood changes after operation, one patient showing a greater reaction and consequently greater blood change than another with the same operative procedure under apparently similar conditions. There is a much greater postoperative reaction under ether anesthesia than is noted when a local anesthetic is used. The longer the anesthetic is continued, the greater the leukocytosis. The height of the leukocytosis is reached thirty-six hours after the operation under ether anesthesia, gradually reverting to normal by the sixth day. The height of the leukocytosis under local anesthesia is reached twenty-four hours after the operation, returning to normal at about the third day. General anesthesia with ether results in a greater reduction of the small mononuclear percentage than occurs after a local anesthetic.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Disease in Childhood, London

2: 323-365 (Dec.) 1927

*Clinical Value of Blood Analyses in Nephritis in Childhood. G. A. Harrison and W. G. Wyllie.—p. 323.
*Incidence of Hernia in Children. D. Paterson and G. M. Gray.—p. 328.
*Periostitis of Metatarsus. W. Attlee.—p. 332.
Fecal Fat Analyses in Children. G. A. Harrison and W. P. H. Sheldon.—p. 338.
Sclerema Neonatorum: Relation to Fat Necrosis: Case. G. L. S. Kohnstam and F. K. Herbert.—p. 349.
*Esophagectasia in Child. J. A. M. Cameron.—p. 358.
Hypertelorism in Several Generations. D. A. Abernethy.—p. 361.

Value of Blood Analysis in Nephritis in Children.—The cholesterol and urea content of whole blood in cases of nephritis has been determined by Harrison and Wyllie, and a differential estimation of the plasma proteins has been made. The results confirm the work of previous investigators. As a guide to the clinical control of a case, the urea estimations are often of great value; the cholesterol and plasma determinations are generally superfluous. As an aid to the classification of the type of nephritis, the same conclusion applies.

Incidence of Hernia in Children.—Among 130,243 children, outpatients, seen by Paterson and Gray, 1,018 were suffering from hernia of some variety, that is, an incidence of 0.8 per cent. There were 773 simple inguinal hernias; operations were performed in 564, with four recurrences. Of the 209 cases in which operation was not performed the hernia had apparently spontaneously disappeared in 185, while in twenty-four the hernia was still present. The chances of a spontaneous disappearance of an inguinal hernia would appear to be better in females than in males. There were only eight cases of strangulated hernia in the whole series, and no case of femoral hernia was found. There were 214 cases of simple umbilical hernias; in forty-six operation was done; 101 disappeared spontaneously and in sixty-seven, for one reason or another, operation was not done. This implies that half the children suffering from umbilical hernia are cured spontaneously and do not require operation, under the age of 12 years.

Periostitis of Metatarsus.—In the three cases reported by Attlee there was no history of injury or other obvious cause. The first complaint was of pain in the dorsum of the foot, accompanied by a little swelling and tenderness over the middle of the metatarsal region. At this stage roentgenograms did not show anything abnormal except a faint shadow round the middle of the shaft of a metatarsal bone, so faint that it was completely overlooked in one instance at any rate. The shadow became more marked as time went on, and after a month or so films showed a fracture with considerable callus. After another two or three months, nothing more than a slight thickening of the bone was visible. In one case the disease affected two metatarsals one after the other, the second bone being affected while the foot was being rested on account of the first. In the case of this bone, at any rate, there was no possibility of injury. The disease begins as a periostitis, and the bone involvement, rarefaction and fracture are secondary occurrences. A satisfactory explanation of the cause of the initial periostitis has not yet been given.

Esophagectasia in Child.—Cameron reports a case of dilatation of the esophagus from cardiospasm caused by an acute inflammatory lesion affecting the cells of Auerbach's plexus in the lower end of the esophagus. The patient was a child, aged 6.

Bristol Medico-Chirurgical Journal

44: 153-228 (Autumn) 1927

Long Fox Memorial Lecture. G. A. Buckmaster.—p. 153.
Visit to Near East. G. Parker.—p. 173.
Clinical Aspects of Dysmenorrhea. R. S. S. Statham.—p. 187.
*Six Cases of Cancer Arising in Tissues Within Duodenal Loop. H. B. Murgoci.—p. 195.

Cancer of Tissues of Duodenal Loop.—Murgoci reports one case each of malignant papilloma of the duodenal papilla, cancer of the lower end of the common bile duct, cancer of

the lower end of Wirsung's duct, and three cases of cancer of the head of the pancreas. All the cases occurred in men between 48 and 68, and were fatal in from six weeks to nine months after the onset of symptoms. In all cases but one there was jaundice, progressive and continuous. Operation was undertaken in two cases only. Both were unsuccessful, as the liver was diseased beyond recovery. All the pancreatic carcinomas had produced secondary growths. The juxta-ampullary carcinoma of Wirsung's duct had produced metastases in the adjoining glands.

44: 229-284 (Winter) 1927

Hospitals of Madrid: "Busman's Holiday." E. W. Hey Groves.—p. 229.
*Acute Suffocative Edema of Lungs. J. A. Birrell.—p. 239.
*Coronary Obstruction: Thirty-Six Cases. C. F. Coombs.—p. 249.
Pathology of Coronary Occlusion. G. Hadfield.—p. 257.
Two Cases of Angina Pectoris Following Sepsis. N. Neild.—p. 263.

Acute Suffocative Edema of Lungs.—Birrell reports four cases in which he relieved the distention of the lung capillaries quickly by diminishing the blood pressure, either mechanically by bleeding or in less urgent cases by vasodepressor drugs, such as morphine, atropine or chloroform. By these measures the left heart also is automatically relieved of some of its load. The amounts of blood withdrawn have varied from 14 to 24 ounces (about 400 to 700 cc.). Bleeding is allowed to continue as long as the condition is improving and the pulse gaining in volume and slowing. If it quickens or appears to be losing some of its newly acquired strength, the bleeding is stopped.

Symptomatology of Coronary Obstruction.—In all the thirty-six patients seen by Coombs, the first phase of the attack was a paroxysm of substernal pain, usually behind the manubrium, occasionally beneath the xiphisternum. It radiated into the arms, the neck, even into the lower jaw, showing in all these situations a predilection for the left side. In sixteen cases friction was noted over the precordium, usually beginning a day or two after the onset of symptoms and disappearing inside a week. The heart sounds were weak in twenty-five instances. A triple cantering rhythm was heard in ten cases; in several cases embryocardia was noted; and in five cases a systolic murmur developed at the apex. In sixteen cases the pulse was alternating at some stage of the attack, the degree of alternation being so slight in most instances as to escape detection except under the test of auscultation. A sharp fall in the blood pressure was noted in seventeen cases. Five patients developed auricular fibrillation; two, a bradycardia that was almost certainly indicative of auriculoventricular block, and another a speeding that suggested the onset of auricular flutter. Slight fever was noted in eight cases. Only nine patients survived. The preponderating value of senile degeneration as a causal factor is strongly in favor of the view usually held that regards these obstructions as due to thrombosis. In twenty-nine instances the type of heart disease present was labeled as senile, and in four as hyperpietic.

British Journal of Children's Diseases, London

24: 249-340 (Oct.-Dec.) 1928

*Analysis of Human Milk. B. Myers.—p. 249.
*Insulin Treatment of Diabetes Mellitus in Children. K. U. Toverud.—p. 257.

Analysis of Human Milk.—The milk of eighty-six nursing mothers was analyzed by Myers. The average analysis was: protein, 1.58 per cent; fat, 3.85 per cent; lactose, 6 per cent, and the caloric value per ounce, 18.95. The last third of the milk contained the highest percentage of fat. The milk of a nursing mother is apt to vary to some extent even from day to day, but unless this variation is excessive it does not affect the infant.

Insulin Treatment of Diabetes Mellitus in Children.—Toverud analyzes forty-seven cases of diabetes mellitus. In the etiology, the hereditary factor does not seem to have played an important rôle, as it was present only in eight cases, or 17 per cent, whereas acute infections immediately preceding the diabetic symptoms were present in twelve cases, or 26 per cent. A diet calculated on the basis of each child's carbohydrate tolerance has been used, providing a protein intake of 3 Gm. per kilogram to children below 7 years of age and 2 Gm. above 7 years of age. The keto-antiketogenic ratio could usually not exceed 1.75:1 without development of acidosis. All children ought to be treated with insulin, and in three daily doses, as blood-sugar studies after protein intake reveal an increased blood sugar in normal and particularly in diabetic children. A blood sugar of normal value throughout the whole day has been obtained in most of these children. In some cases in which the disease has lasted for some time or is of a severe character, the blood sugar may be kept normal in the course of the day with three daily doses of insulin half an hour before meals. During the night the blood sugar rises, and usually earlier in the night the more severe the diabetes. The highest blood sugar value throughout the twenty-four hours is the fasting blood sugar in the morning. Of the forty-seven children treated in this series, seventeen, or 36 per cent, succumbed; five died in coma closely connected with an infection. One child died in coma just after a fracture of the right femur. In four cases the children refused insulin treatment at home, and in the remaining seven cases little attention was paid to the diet, and insulin treatment was never given regularly.

British Medical Journal, London

2: 1063-1126 (Dec. 10) 1927

Chronic Appendicitis: I. Symptomatology and Diagnosis. W. Trotter.—p. 1063.
Id.: II. Diagnostic Difficulties in Chronic Appendicitis. J. W. Dowden.—p. 1066.
Id.: III. Gynecologic Considerations in Chronic Appendicitis. V. Bonney.—p. 1066.
Id.: IV. Etiology and Sequels of Chronic Appendicitis. A. J. Walton.—p. 1068.
Action and Uses of Ovarian Extracts. W. E. Dixon.—p. 1070.
Clinical Features of Ectopic Pregnancy. D. Dougal.—p. 1074.
*Compound Comminuted Fracture of Tibia and Fibula Involving Ankle Joint Treated by "Bipp Method." M. Bell.—p. 1077.
Gas in Peritoneal Cavity. W. McAdam Eccles.—p. 1078.
*Acute Phosphorus Poisoning. C. F. Swinton.—p. 1080.
Arthritis Due to Paratyphoid B Bacillus Without General Symptoms. J. T. Lewis.—p. 1080.
Severe Hemorrhage Following Vaginal Tear. J. A. Gaynor.—p. 1080.

Bipp Treatment of Compound Fracture.—Bell relates the case of a man who sustained a compound fracture of the ankle joint from being run over by an automobile. After the wounds had been enlarged, several fragments of the tibia, lying completely detached, were removed, and a considerable tag of soiled, hopelessly lacerated muscle, hanging out of the inner wound, was excised. The upper cartilaginous surface of the astragalus was visible through the widely opened ankle joint. A few small bleeding vessels were ligatured, the wounds, treated by the bipp method, were sutured by silkworm-gut sutures, and the leg was fixed between two lateral Gooch splints, extending from the tubercle of the tibia above to the sole of the foot below. Recovery was uninterrupted.

Acute Phosphorus Poisoning.—Swinton's patient swallowed a teaspoonful of phosphorus mice paste. She died five days afterward. The full necropsy report is published.

1: 83-120 (Jan. 21) 1928

Treatment of Exophthalmic Goiter. A. J. Walton.—p. 82.
Use of Hypertonic Solutions in Treatment of Increased Intracranial Pressure. W. R. Brain.—p. 86.
*Experiments in Malnutrition. V. H. Mottram.—p. 88.
Diseases of Faulty Nutrition. R. McCarrison.—p. 92.
*Pernicious Anemia Treated with Liver Diet. F. A. Phillipps.—p. 93.
Thyroid and Manganese Treatment. H. W. Nott.—p. 94.
Placenta Praevia in Four Successive Pregnancies. T. MacCarthy.—p. 95.
Forgotten Swab in Pelvis; Encysted. H. R. Segar.—p. 95.
Lubricant for Applying Zinc Ionization to Male Urethra. C. F. O. White and B. B. Sharp.—p. 96.

Experiments in Malnutrition.—The inadequacy of bread as a diet is explained by Mottram as being due mainly to the inadequacy of the quantity and quality of its protein. Animal proteins, even gelatins, supplement the proteins of bread, and the mixture has a high biologic value. Males need more protein of high biologic value and more vitamin B than females. Both brown and white breads are, by themselves, poor articles of diet. There is as yet no direct evidence that in a mixed diet brown bread is superior to white. There is

strong evidence from animal work that for successful nursing of young the vitamin B content of the diet must be high.

Effect of Liver Diet in Pernicious Anemia.—Phillipps' patient was 68 years of age. Her erythrocyte count was 1,670,000; hemoglobin, 45 per cent. A prolonged course of arsenic had failed to produce appreciable alteration in the blood count. She was then given 7 ounces of calf's liver daily, partly as raw sieved pulp and partly as cooked liver. Within five weeks the erythrocyte count had risen to 5,580,000; hemoglobin, 72 per cent. The rapidity of improvement appears to be remarkable in a patient of this age.

China Medical Journal, Shanghai

41: 989-1065 (Dec.) 1927

Malaria in Village Near Peking. C. U. Lee and H. E. Meleney.—p. 989.
Eye Examinations for Trachoma in 1,602 Cases. Y. P. Chan and F. Oldt.—p. 992.
Kahn Reaction for Syphilis. L. C. P. Young.—p. 999.
Kahn Precipitation Test for Syphilis. J. E. Skinner.—p. 1004.
*Infant and Child Mortality in North China. J. Hammond and K. Hsu.—p. 1006.
*Ephedrine. Cases. S. T. Wu and B. E. Read.—p. 1010.
Skiascopy with Cylinders. H. T. Pi.—p. 1017.
Case of Abdominal Pregnancy Retained and Infected. A. H. Skinner and H. Hankow.—p. 1026.
*Multiple Urethral Calculi. F. Y. Wu and E. R. Wheeler.—p. 1028.
Methods of Preparing Intestinal Protozoa for Study. J. F. Kessel.—p. 1030.

Infant and Child Mortality in North China.—Hammond and Hsu present figures to show that in Peking, in the class of patient who comes to the Peking Union Medical College Hospital, the average size of the family, the birth rate and the mortality rate of children at different ages are comparable to those in Japan and the United States. As to the causes of death, infections appear to play a more important rôle than disorders of nutrition.

Ephedrine in Asthma and Hypotension.—Wu and Read report favorably on the use of ephedrine in cases of asthma and hypotension. In urticaria it does not seem to give any benefit at all. Ephedrine was given by mouth or intramuscularly in from 0.04 to 0.16 Gm. doses, from 0.06 to 0.08 Gm. being the average. Usually a single dose was sufficient to relieve the symptoms, but at times it was necessary to give a second or even a third dose within twenty-four hours. Beneficial effects usually took place within from twenty to thirty minutes, if ephedrine was given by mouth, and in about ten minutes if it was given intramuscularly. Prolonged use of ephedrine in small doses does not seem to have any ill effect. One patient, who has been getting ephedrine, from 0.04 to 0.06 Gm., every one to three days for three years, has not complained of any undesirable effect, nor has any definite change been found except for some increase in the systolic blood pressure.

Multiple Urethral Calculi.—Wu and Wheeler removed ninety-three stones from the dilated posterior urether of a boy, aged 9. Only one stone was of any size. It measured 1½ by 1⅛ inches (38 by 29 mm.).

Glasgow Medical Journal

109: 1-72 (Jan.) 1928

*Leukemia in Childhood: Twenty-Two Cases. W. K. Hunter.—p. 1.
*Influence of Variations of Vagal Tone in Partial Heart Block. G. A. Allan.—p. 30.
*Dick Test and Immunity to Scarlet Fever. R. Cruickshank.—p. 46.

Leukemia in Childhood.—Hunter points out that leukemia in childhood differs in several respects from that in the adult. The course of the illness in the child is usually more acute, the number of leukocytes in the blood is often much smaller, and the differentiation into the myeloid and lymphoid types is frequently a matter of considerable difficulty. There are aleukemic cases, too, i. e., cases without any increase, and sometimes a diminution, of the white cells, in which, if a differential count of the leukocytes is omitted, an error of diagnosis is almost inevitable. Hunter's youngest patient was 7 weeks old when she first came under observation, and as she died a week later, the total duration of the disease (unless it started during intra-uterine life) could not have been more than eight weeks, and it might have been considerably less. There were three patients aged 2½ years; the age of the remainder ranged from 2½ to 14 years, eight of these children being below 7 years, and ten above. The onset of symptoms in some of the cases seemed to be so sudden as almost to suggest an acute infection. In others the illness came on insidiously, so that the total duration was difficult to determine. Counting, however, from the first observed symptoms to the time of death, one patient lived two years and four lived one year, but none of the other sixteen lived more than seven months. Of these sixteen, eight died within two months, the shortest duration of illness being from four to five weeks.

Partial Heart Block Without Evidence of Heart Disease.—A case of partial heart block in a healthy adult, without evidence of heart disease, is recorded by Allan. Exercise abolished the defect temporarily. Pressure on the vagus usually abolished the defect. A deep inspiration slowed the heart, and, if anything, increased the defect. Ocular compression stopped the whole heart for at least four and one-half seconds. Atropine always temporarily abolished the block. Atropine, as an initial and transient effect on three occasions, either produced block when conduction was normal or increased the grade of block which was already present. Atropine, on four occasions, produced dissociation of auricle and ventricle, the ventricular rate during the disturbance being greater than that of the auricles.

Diagnostic Value of Dick Test.—Cruickshank has found that diagnostically the value of the Dick test is limited, since a proportion of scarlet fever patients are Dick-negative at the onset of the infection while others fail to become Dick-negative during convalescence. Theoretically, all cases should be Dick-positive during the first few days of illness and become Dick-negative in from ten to fourteen days' time. The Dick test has considerable value in indicating when immunity has developed and how long it persists in (*a*) patients with scarlet fever; (*b*) persons actively immunized with scarlatinal streptococcic toxin, and (*c*) persons passively immunized with antiscarlatinal serum.

Journal of Obst. & Gynec. of Brit. Empire, Manchester

34: 701-915 (Winter) 1927

*Influence of Disease of Thyroid on Menstruation. H. Gardiner-Hill and J. F. Smith.—p. 701.
Chronic Nephritis, Accidental Hemorrhage and Eclampsia. R. H. Paramore.—p. 712.
Prevalence and Duration of Breast Feeding in Hospital Practice. A. L. McIlroy.—p. 729.
Causation of Onset of Labor. R. A. Gibbons.—p. 739.
Material and Methods of Gynecologic and Obstetric Clinic. W. B. Bell.—p. 756.
Case of Bilateral Lutein Cysts Complicating Uterine Fibromyomas. W. Shaw.—p. 772.
*Results of Wassermann Reactions Obtained from 2,000 Consecutive Pregnant Women. G. H. Dodds.—p. 779.
*Ovarian Pregnancy with Hydatidiform Degeneration. D. A. Fraser and R. S. S. Statham.—p. 788.
Case of Pneumococcal Peritonitis During Puerperium with Recovery. H. F. Seymour.—p. 793.
Portable Operating Table. L. C. Rivett.—p. 795.

Influence of Disease of Thyroid on Menstruation.—An examination made by Gardiner-Hill and Smith of 300 cases of thyroid disease showed that menstruation may or may not be affected in these conditions, but when it is, the alteration tends to be in a uniform direction. The type of menstruation varies inversely with the degree of thyroid activity; i. e., in hypothyroidism there is often a tendency to excessive hemorrhage and in hyperthyroidism, to amenorrhea.

Wassermann Reaction in Pregnant Women.—Dodds reports the results of the Wassermann reaction obtained in 2,000 consecutive pregnant women. A report other than negative was obtained in 130. Attention is drawn again to the frequent absence of a history or of clinical manifestations of syphilis in the pregnant woman; to the high percentage of stillbirths and deaths under 1 year of age from syphilis, and to the preventable character of this condition. It is shown that the first evidence of syphilis, and in some cases the only evidence, was a positive Wassermann reaction.

Ovarian Pregnancy with Hydatidiform Degeneration.—The pregnancy in this case was of about six weeks' duration. The gestation cavity was situated outside the corpus luteum,

which was intact. There was no decidual change nor was there any ectopic endometrium in the ovary. Attention is drawn by Fraser and Statham to the presence of interstitial cells in the wall of the gestation sac. These might be mistaken for decidual or lutein cells.

Lancet, London

1: 115-166 (Jan. 21) 1928

Pernicious Anemia. Dawson.—p. 115.
Education of Medical Officers for Service in Tropics. A. Balfour.—p. 117.
Complications of Fractures of Long Bones. C. H. Fagge.—p. 122.
*Serum Treatment of Scarlet Fever. J. A. Scott.—p. 124.
Minor Tuberculosis. E. Ward.—p. 125.
Localized Outbreak of Bacillary Dysentery in Smethwick. A. G. M. Severn and E. W. Evans.—p. 126.
*Effect of Intravenous and Intramuscular Inoculations of Novasurol in Rabbits. P. Lazarus-Barlow.—p. 127.
*Spasmodic Auricular Fibrillation and Bronchopneumonia Complicating Sepsis in Puerperium. J. A. Kerr.—p. 128.
Case of Pressure Palsy of Anterior Tibial Nerve. N. Walsh.—p. 129.
Case of Cystic Pneumatosis of Bowel. J. Silverstone.—p. 129.

Serum Treatment of Scarlet Fever.—An experience with 150 cases of scarlet fever has convinced Scott that scarlatinal streptococcal antitoxic serum, given early in the disease, causes a fall in the temperature, pulse and respiration rates, relieves the subjective symptoms, and prevents the development of complications. No immediate benefits were noted in cases treated after the fourth day of the disease. Concentrated scarlatinal streptococcal antitoxic serum was used in each case, 10 cc. being injected intramuscularly in the vastus externus muscle.

Effect of Injections of Merbaphen in Rabbits.—Merbaphen (novasurol) is the double salt of sodium mercurichlorphenyl oxyacetate with diethylbarbituric acid. It is claimed to be a powerful diuretic, absolutely free from irritant properties, and therefore suitable equally for intravenous and for intramuscular injection, especially in cases of morbus cordis associated with dropsy. Animal experiments made by Lazarus-Barlow suggest that in cases of long-standing heart disease the dose of merbaphen should be considerably reduced, and that intravenous inoculation is more advisable than intramuscular. He found that merbaphen may have a very profound action on the healthy liver and kidneys of rabbits; since in chronic heart disease the liver and kidneys are affected to a greater or less degree, this fact may be of importance. In chronic heart disease the central portions of the lobules of the liver are most severely affected by the back pressure, and the experiments show that this is the portion of the liver on which the drug exerts its greatest effect. It would seem advisable, therefore, that in cases of long-standing heart disease in which there is a possibility of injury to the liver through back pressure the dose of merbaphen should be much reduced. In such cases the kidneys also may become damaged, and the experiments suggest that if there is any nephritis or albuminuria the drug is contraindicated, or at least should be given only in very small doses. The drug appears to have considerable irritant properties; no ill effects, however, were observed at the sites of inoculation of the intravenous doses.

Spasmodic Auricular Fibrillation with Pelvic Sepsis.—Kerr asserts that a search of the literature failed to reveal a case of recovery of severe auricular fibrillation when complicated by bronchopneumonia. The case reported by him seems to afford a convincing argument in favor of large doses of digitalis in the treatment of auricular fibrillation. Although the patient never had any blood infection, she was seriously ill from pelvic sepsis, and hemolytic streptococci were found in the cervical canal. In addition, there had been a breakdown in the cardiac mechanism on at least one previous occasion, four days before the treatment was initiated, and there was a fairly marked degree of bronchopneumonia. It is therefore all the more remarkable that, within twelve hours of the administration of 250 minims (15 cc.) of a tincture of digitalis of known potency, fibrillation ceased, and no apparent cardiac irregularity could be detected until twelve hours afterward, although the pulse rate was taken at the apex at half-hourly intervals during most of that period.

Practitioner, London

120: 1-68 (Jan.) 1928

*Physiologic Action of Tea as Beverage. R. J. S. McDowall.—p. 8.
Chronic Arthritis: Treatment. W. H. Wynn.—p. 12.
Significance of Pain in Lower Extremities: Treatment. W. Harris.—p. 28.
Diaphragm and Pleural Effusions. C. Miller.—p. 38.
General Practitioner's Part in Public Health Services. O. M. Holden.—p. 46.
*Treatment of Varicose Veins by Injection Methods. R. Thornhill.—p. 54.
Treatment of Gastric and Duodenal Pain. J. T. Maclachlan.—p. 59.

Physiologic Action of Tea.—McDowall concludes that the moderate consumption of properly made tea does not have any serious disadvantages and that, taken with meals, it acts as a useful antagonist to the somewhat soporific effect of the meal itself. It is, however, to be considered essentially a luxury, without any real value, except that it promotes a sense of well being. Its bad effect, if taken in excess, or if too long infused, may, in some persons, be considerable, although fortunately these effects are never permanent and disappear if the supply is reduced. An important practical point is that when tea has to be made in large vessels which require replenishing from time to time, some method must be adopted for removing the used tea leaves readily by having, for example, the tea suspended in small muslin bags or in a special wire gauze chamber. When urns are in use, the tea should be made in teapots by rapid infusion with boiling water and poured into the larger vessels, which may then be kept heated as required.

Treatment of Varicose Veins by Injection.—Thornhill prefers the Genevrier method of treatment of varicose veins. The constituents of the solution recommended by Genevrier are as follows: urethane, 2 Gm.; quinine hydrochloride, 4 Gm.; distilled water, 30 cc. This is sterilized by boiling, and, as the quinine crystallizes out on cooling, must be immersed in a bowl of hot water before using. During the process the patient remains seated in an armchair, which position keeps the veins to be treated in a semidistended state. At the first treatment, it is unwise to inject more than 1 cc. of the solution. At subsequent treatments, 3 cc. is injected. The injections are made along the vein at intervals of from 1 to 2 inches, and four or five injections are given. Each puncture is cleaned with ether and sealed with collodion.

Japanese Journal of Medical Sciences, Tokyo

1: 1-233 (June 27) 1927

*Acute Intestinal Obstruction. S. Saito.—p. 1.
Effect of Roentgen Rays on Testis of Rat. H. Yamakawa.—p. 13.
*Acute Intestinal Obstruction. S. Saito, K. Sakai and S. Suzuki.—p. 43.
Changes in Chlorides Metabolism in Duodenal Obstruction. K. Horiye.—p. 57.
Studies of Serum Albumen Especially in Surgical Diseases. H. Okutani.—p. 69.
Mammary Glands of Men and Women at Various Ages. J. Yoshida.—p. 171.
Case of Mucocele of Appendix, Case of Its Rupture and Two Cases of Pseudomyxoma Peritonei of Appendicular Origin. S. Saito.—p. 227.

Acute Intestinal Obstruction: Rôle of Pancreas.—The results of his experiments lead Saito to believe that the pancreas is an important factor in causing death in cases of high intestinal obstruction. The pancreatic juice displays the most powerful toxic activity at the moment of flowing into the duodenum. The bile, on the other hand, plays a physiologic part by inhibiting this toxicity of the pancreatic secretion. In fatal cases, the toxic substances which are formed in the duodenum by activation of the pancreatic juice are absorbed through the mucous membrane and gain entrance into the circulation, the inhibiting activity on the part of bile being insufficient.

Cause of Death in Acute Intestinal Obstruction.—Saito et al. are of the opinion that the real cause of the rapid death of animals with duodenal obstruction should be sought in the perverted condition of the small intestine mainly below the obstruction. By transplanting the bile duct or the ureter into the duodenum below the obstruction, intoxication is prevented and the life of the animal prolonged. Irrigating the intestine below the obstruction with physiologic sodium chloride solution is similarly effective. Anastomosis of the duodenum above the obstruction with the colon is useless unless the intervening loop of intestine is irrigated.

Bulletins de la Société Médicale des Hôpitaux, Paris

43: 1711-1789 (Jan. 5) 1928

*Prolonged Intensive Arsenical Treatment of Syphilitic Aneurysms. M. Pinard.—p. 1711.
*Case of Pleurisy with Cholesterol in Effusion. J. Rouillard and Nativelle. —p. 1717.
Treatment of Pruritus and of Pruriginous Dermatoses by Lebedjew's Method. A. Sézary and F. Benoist.—p. 1722.
Amebic Abscess of Liver Simulating Pneumonia. F. Bezançon and E. Bernard.—p. 1728.
*Pleuropulmonary Syndrome in Abscesses of Liver. N. Fiessinger and R. Casteran.—p. 1746.
Generalized Fibrocystic Osteitis. R. Morichau-Beauchant, P. Pérochon and Fagart.—p. 1757.
*Vaccinotherapy in Typhoid of Prolonged Course. J. Huber and V. Jordachesco.—p. 1761.

Prolonged Intensive Arsenical Treatment in Syphilitic Aneurysms.—In syphilitic aneurysms Pinard believes in using neoarsphenamine intravenously in doses ranging from 0.10 Gm. to 1.20 Gm. at the rate of about five injections in the first week and then at longer intervals. Sicard, Caussade and Hallé, in the discussion which followed, all argued in favor of smaller doses given subcutaneously, intramuscularly or orally.

Case of Pleurisy with Cholesterol in the Effusion.—The authors report a case of pleurisy in a woman who had had previous attacks. The fluid contained 12 Gm. of cholesterol per liter and a monobutyrinase.

Pleuropulmonary Syndrome of Base in Abscesses of Liver.—Two cases in which pleuropulmonary congestion proved to be an early manifestation of hepatic abscess are reported by Fiessinger and Casteran. The amebic abscess was cold. The temperature fell to normal within twenty-four hours after simple puncture and the injection of emetin. The reduction in size of the abscess cavity was controlled by radiologic observation of the injected iodized oil.

Vaccinotherapy in Typhoid of Prolonged Course.—In five prolonged cases of typhoid, a single injection of typhoid-paratyphoid vaccine, subcutaneously, was found by Huber and Jordachesco to be followed by complete apyrexia.

Bulletin de la Soc. d'Obst. et de Gynéc., Paris

16: 693-748 (Dec.) 1927

Obstetrics in Argentina, Chile, Uruguay and Brazil. A. Couvelaire.—p. 693.
*Cancer of Uterus in Pregnancy: Radium Treatment. H. Pouey.—p. 702.
Case of Uterine Inversion of Four Months' Duration. R. Dupont.—p. 704.
Treatment of Mammary Abscesses by Besredka's Method of Puncture and Dressings. V. Le Lorier.—p. 707.
*Pyotherapy of Puerperal Infection. Devraigne, Sauphar and Laennec.—p. 710.
*New Treatmtnt of Periuterine Infections. Lévy-Solal and Louvel.—p. 712.
Semipreventive Polyvalent Vaccination in Obstetrics. P. Brault and C. Rochard.—p. 717.
*Treatment of Pernicious Anemia of Pregnancy by Injections of Blood. P. Brault.—p. 719.

Cancer of Uterus in Pregnancy.—In the case reported by Pouey, there was a cancer of the uterus in a woman, six and a half months pregnant. A tube of radium kept for three days in the cervical cavity was well tolerated. Labor came on only eighteen days ahead of the time calculated. Delivery and puerperium were normal. There were no cervical tears. Clinical cure has now persisted for forty-three months. The child is apparently in perfect health.

Treatment of Puerperal Infection by Pyotherapy.—The pus used by Devraigne et al. was obtained by puncture of a fixation abscess provoked by injection of oil of turpentine into a horse. After bacteriologic examination and incubation, to demonstrate its sterility, the pus is suspended in physiologic solution of sodium chloride to which a preservative has been added. The dose used was 4 cc. a day, given subcutaneously in two injections, one in each thigh. The authors divide their cases into two groups; the first, in which pus was used therapeutically, comprises fifteen cases. In ten of these the results were extremely favorable, in four, fair, in one, nil. The second group consists of five cases in which the aseptic pus was intended to act as a preventive. In three cases, puerperal infection did not declare itself in spite of a previously existing elevation of temperature. In two cases there was infection.

New Treatment of Periuterine Infections.—In treating inflammatory infiltrations of the parametrium, of the broad ligament and of the pelvis, Lévy-Solal and Louvel use a bilateral and symmetric injection of vaccine or active protein into the uterine tissue, about on a level with the external surfaces of the lateral wall of the cervix, in the zone of maximum absorption, the needle being introduced to a depth of 3 or 4 cm. There is a sensation of warmth at the end of half an hour. Shock then occurs, but its duration is short, while the pelvic reaction lasts at least six or seven hours. After this treatment, pain subsided more rapidly than after any other treatment. Chronic edemas were also favorably influenced. Twelve illustrative cases are described.

Treatment of Pernicious Anemia in Pregnancy by Injections of Blood.—Brault treated six cases of confirmed pernicious anemia in pregnancy by means of subcutaneous injections of blood and obtained four complete cures. The blood formulas are given for the six cases. Three of the patients had recovered from previous anemic conditions. The injections, which are gradually increased in amount from 2 to 20 cc., are given every two days. Previous examination of the blood by the Beth-Vincent method, is useful, but not indispensable. The subcutaneous injection of blood seems to act as a specific stimulant of hematopoiesis. Injections of blood made in the cases in which the fetus is at the earliest limit of viability, retard the development of anemia and make it possible to delay delivery until the fetus is surely viable.

Lyon Chirurgical, Lyons

24: 625-764 (Nov.-Dec.) 1927

*Nerve Grafts: Heterografts of Sciatic. J. Jianu and G. Buzoianu.—p. 625.
*Septic Phlegmon of Floor of Mouth. A. Vachey and M. Dechaume.—p. 642.
*Results of One Hundred and Nine Radical Operations for Breast Cancer. E. Dahl-Iversen.—p. 648.

Nerve Grafts: Heterografts of the Sciatic.—The problem of nerve transplants is a complicated one, and so far as the surgical phase of it is concerned, is only partly solved. Experimental data demonstrate the superiority of dead heterogeneous nerve transplants in the repair of considerable loss of substance in peripheral nerves.

Septic Phlegmon of Floor of Mouth as Described by Gensoul.—Vachey and Dechaume insist that so-called Ludwig's angina was described by Gensoul in 1830. Gensoul, then surgeon in chief of the Hôtel-Dieu de Lyon, has given a clear anatomic and clinical picture, as well as the principles underlying its surgical treatment. As a matter of historic justice the authors suggest that the name Ludwig's angina be replaced by that of septic phlegmon of Gensoul.

Results of One Hundred and Nine Radical Operations for Breast Cancer; Relation of Microscopic Changes to Recurrence.—One hundred and nine cases were followed up three years after radical operation. Thirty-three per cent of the patients were dead. The following factors were found to be of prognostic importance: (1) Size of the tumor: Tumors the size of a plum gave a mortality of 17 per cent; larger tumors up to the size of an egg, 87 per cent. (2) Variety: Medullary carcinoma had a mortality of 100 per cent; simple carcinoma, 68 per cent, adenoma and scirrhus, 59 per cent. (3) When the axillary glands did not contain microscopic metastases, the mortality was 41 per cent, as contrasted with 80 per cent when metastases were present. Microscopic metastases in the axillary glands were found in 65 per cent of all cases. Their absence from the axillary glands is not a guarantee that they are not present in the supraclavicular glands. He estimates that when microscopic metastases exist in the axillary glands, there is supraclavicular involvement in at least 27 per cent of the cases. For these reasons, the author recommends removal of the supraclavicular glands in all cases.

Paris Médical

63: 521-536 (Dec. 24) 1927

Method of Examination in Diseases of Biliary Tract. J. Carrère.—p. 521.
*Diathermy in Diseases of Stomach, etc. E. Biancani and H. Biancani.—p. 527.
Arsenic Preparation in Antisyphilitic Therapy. E. Gaujoux and A. Aubry.—p. 531.

Diathermy in Diseases of Stomach, Duodenum and Region of the Solar Plexus.—The eleven cases of E. and H. Biancani, in which pain in the upper quadrant of the abdomen was a prominent symptom, were favorably affected by diathermy. The tri-weekly treatments lasted from thirty to forty-five minutes. The intensity of the current was increased from 2,000 to 2,500 and sometimes to 3,000 milliamperes. These treatments not only banished pain; they diminished aerophagy, revived the appetite, overcame vomiting, migraine and vertigo and regularized the stools. In two cases, improvement of the objective disturbances was verified by fluoroscopic examination.

Presse Médicale, Paris

35: 1569-1584 (Dec. 24) 1927

*Intestinal Stasis and Inflammations of Ascending Colon. E. Duroux.—p. 1569.
Pathogenesis of Ozenous Atrophic Rhinitis. A. Malherbe.—p. 1572.
Submalleolar Erythrocyanosis. E. Juster.—p. 1573.

Intestinal Stasis and Inflammations of Ascending Colon.—Duroux points out the rôle of inflammation of the ascending colon in chronic intestinal stasis. He obtained excellent results from simple operations, such as cecoplication, and believes that colectomy should be reserved for exceptional cases of extensive volvulus or megacolon.

36: 1-16 (Jan. 4) 1928

*Influence of Ingestion of Albuminoids on Arterial Pressure. P. Pagniez and A. Escalier.—p. 1.
*Pathogenic Rôle of Nanta's Splenic Mycosis. C. Oberling.—p. 2.

Influence of Ingestion of Albuminoids on Arterial Pressure.—During the first period of digestion albuminoids produce much greater hypotension than do other foods. Pagniez and Escalier tabulate the readings in seven patients. After a meal composed of 160 Gm. of beefsteak, one egg, 30 Gm. of bread and half a glass of water, the pressure reading may fall two or three points below the subject's average pressure.

Pathogenic Rôle of Nanta's Splenic Mycosis.—Oberling suggests that Nanta's splenic mycosis supervenes simply as an infection grafted on a spleen already diseased. Mycotic lesions must reach an extraordinary development before they can be perceived as exerting a decisive effect on the disease process. It is probable that iodide treatment acts on *Aspergillus nidulans* and cures the mycosis, but it does not influence the basic disease on which the mycosis is grafted.

Revue de Chirurgie, Paris

65: 617-695, 1927

Case of Obliterated Vena Cava Inferior. P. Stricker and J. de Girardier.—p. 617.
*Osteochondritis Dissecans. Paitre and Du Bourguet.—p. 626.

Osteochondritis Dissecans.—In an extensive article on osteochondritis dissecans the authors review the most important contributions to this subject; namely those of König, Barth and Axhausen. They conclude that it is a clinical entity per se, as differentiated from other conditions capable of forming joint mice. Its pathogenesis is hypothetic. A purely inflammatory or traumatic etiology must be dismissed. It appears more probable that there exists a certain special fragility of the epiphyses, giving rise, at a later date, to detachment of foreign bodies, in other words a trophic, necrosing process. The cause of this local necrosis has not been established. Axhausen's conception of its embolic origin, and of its relationship to the diseases described by Perthes, Köhler and Kienböck appears convincing. These varied clinical entities have a number of characteristics in common: Involvement of joints in young subjects of the male sex; origin in epiphysis; slow evolution; the disparity in clinical and radiologic signs, and the factor of trauma, always invoked though never definitely proved.

Revue de Médecine, Paris

44: 859-998, 1927

Pyloric Stenosis Due to Muscular Hypertrophy in Infants. M. Coffin.—p. 859.
*Chronic Idiopathic Cyanosis. C. Truneček.—p. 891.

Chronic Idiopathic Cyanosis.—When the circulation is interrupted, for example during syncope, the blood remains stationary, becomes filled with waste products and consequently becomes violet or blue in color. The changes in color can best be studied in the tongue and buccal mucosa. The symptoms of idiopathic cyanosis are irritability and early fatigue and sometimes a condition of the organs similar to that occurring in intermittent claudication. Treatment consists in neutralizing the superfluous acids of the blood, especially carbonic acid, which is the real determinant of the cyanotic color. This may be done by a visit to the seashore and by the drinking of mineral waters. Alkaline salts may be injected subcutaneously in the form of Truneček's serum. When the cyanosis originates in a lack of propulsive power of the heart, cardiac tonics, such as compounds of xanthine, caffeine, theine and theobromine should be administered as well.

Revue Médicale de la Suisse Romande, Geneva

47: 1001-1072 (Dec. 25) 1927

Protecting the New-Born Against Tuberculosis with B C G. A Cramer.—p. 1001.
*Necropsy on Infant Vaccinated with B C G. R. Girod and C. Debarge.—p. 1011.
Protection of the New-Born Against Tuberculosis by B C G. S. Cordey.—p. 1017.
*Death from Tuberculous Meningitis of Child Vaccinated with B C G. J. Taillens.—p. 1033.

Necropsy on Infant Vaccinated with B C G.—Girod and Debarge present the case of an infant who received during the first week of life three injections of B C G vaccine. The child died of gastro-enteritis on the twenty-fifth day. In the marrow of a vertebra were found a few tubercle bacilli, evidence of their passage by the blood route. There was no anatomic lesion of tuberculosis either in the spinal cord or in any other organ. These facts show that the ingestion of B C G does not provoke tuberculous lesions, even in very delicate infants, the authors maintain.

Death from Tuberculous Meningitis of Child Vaccinated with B C G.—A child, aged 6 months, who had been vaccinated with B C G in the first days of life, died of tuberculous meningitis, aged about 6 months. Either he had not been protected by the vaccine or he had been infected by it. Vaccination with B C G is not without danger, Taillens says. As a safer and more effective measure, the child should be separated from all persons affected with open tuberculosis.

Schweizerische medizinische Wochenschrift, Basel

57: 1257-1280 (Dec. 31) 1927

Growth of Thyroid in School Age. H. Golergant.—p. 1257.
Increase of Trachoma in Zurich Canton. E. von Mandach.—p. 1266.
Influence of Anesthetics on Eye. R. Pflimlin.—p. 1268.
*Influence of Iodine on Milk Secretion. Grumme.—p. 1273.

Influence of Doses of Iodine on Milk Secretion.—Ordinary and small doses of an iodine protein compound stimulate the activity of the milk glands; larger doses check it. Unlike potassium iodide, this compound does not produce symptoms of iodism. It seems possible to increase the iodine content of milk by feeding a suitable iodine preparation to cattle, and thus preserve infants and young children from goiter.

58: 1-24 (Jan. 7) 1928

Statistics of Exophthalmic Goiter in Switzerland (1922 to 1924). W. Flück.—p. 2. C'td.
*New Clinical Urinary Indicator. J. Markwalder.—p. 12.
*Determination of Urinary Acidity. W. Strauss.—p. 13.
Puncture Wound of Heart; Cure by Operation. T. Naegeli.—p. 14.
Is There a Diphtheria Peril at the Present Time? O. Stiner.—p. 15.
Treatment of Carcinoma of Female Genitalia. Questionnaire.—p. 17.

New Clinical Urinary Indicator.—Markwalder recommends a mixture of methyl red and methyl blue (equal parts of each in a 0.5:1,000 alcoholic solution) for testing the reaction of urine. In the presence of acid this solution turns blue; in the presence of alkali, green. In a dark bottle, it keeps well. It is adapted to quantitative examination.

Determination of Urinary Acidity.—Criticisms of Neubauer's indicator on theoretic grounds are answered. It remains, however, in Strauss' opinion, an inconvenient method, and he suggests, instead, the use of methyl red, which gives a red color to a highly acid urine.

Anales de la Facultad de Medicina, Lima

9: 167-299, 1926

*General Paralysis. P. Pardo Figueroa.—p. 167.
*The Causative Organism of Verruca Peruana. O. Hercelles.—p. 231.
A Conception of Verruca Peruana. P. Weiss.—p. 279.

Malaria Therapy of General Paralysis.—Among thirty cases of general paralysis treated with malaria, 76 per cent were benefited. In some cases, in which blood was removed after inoculation, the paroxysms ceased the same day and usually permanently. Reinoculation on failure of the first inoculation to produce reaction, was followed almost immediately by a series of attacks. Malaria therapy was also used successfully in cases of cerebral syphilis and taboparalysis and in one case of dementia praecox with suspected syphilis. Bismuth seemed to be the best adjuvant of malaria treatment. In cases overtreated with arsphenamine, results appeared to be less definite. In some cases complete remission has lasted longer than four years. With intravenous inoculation, the incubation period was briefer than with the subcutaneous method. The apparent lack of relation between the degree of the febrile reaction and the effect suggests that the mechanism of the curative action of malaria is complex. A number of old traditions and documents bear out the idea that malarial therapy had been used by the Peruvians before the time of Columbus.

Causative Organism of Verruga Peruana.—In July, 1925, Hercelles isolated for the first time the causative organism of verruga peruana from a patient's blood. He has also found it in the subcutaneous swellings. *Bartonella bacilliforme* is merely the form assumed by the organisms in the peripheral blood. As it is actually a coccus, a better name would be *Bartonella coccoides.*

Archivos Latino-Amercanos de Pediatría, Buenos Aires

21: 717-792 (Oct.) 1927

Chronic Myeloid Leukemia. M. Acuña and F. Bazán.—p. 717.
Variot's Paroxysmal Cyanosis. P. de Elizalde and R. Beranger.—p. 722.
Chronic Leukemic Myelosis. J. Orrico.—p. 725.
Physical Therapy in Infantile Paralysis. V. Escardó y Anaya.—p. 741.
*Scarlet Fever and Croup. M. J. del Carril.—p. 759.
*Pneumococcic Meningitis in Infants. P. Rueda.—p. 765.
Phlegmasia Alba Dolens in Nephritis. A. Armand Ugón.—p. 768.
Desquamating Scarlatinoid. L. M. Petrillo.—p. 775.

Scarlet Fever and Croup.—Of seven patients with scarlet fever with early symptoms in the throat, most developed croup. Intubation was required. In none were diphtheria bacilli found. In all patients with croup, one must remember the possibility of scarlet fever.

Pneumococcic Meningitis in the New-Born.—In a 14 day old infant with meningitis, the striking fact was that the existing meningitis was primary and was caused by the pneumococcus. The child died thirty-six hours from the onset.

Revista Médica del Uruguay, Montevideo

30: 653-704 (Nov.) 1927

*Extramembranous Pregnancy. A. Turenne.—p. 653.
Meningeal Hemorrhage and Eye Symptoms. P. Scremini, W. Meerhoff, E. D. Anaya and E. de Boni.—p. 660.
*Endocrine Disturbances Simulating Kidney Disease. J. C. García Otero and O. Vidovich.—p. 671.
Postencephalitic Parkinsonism. J. C. Mussio Fournier et al.—p. 685.
Gynecomastia. C. Stajano and C. M. Domínguez.—p. 688.
Diabetes Insipidus with Cerebral Abscess. T. Cozzolino and A. E. Gaggero.—p. 695.

Extramembranous Pregnancy.—Among some 18,000 labor cases seen since 1915, there was only one of extramembranous pregnancy. Less than sixty are reported in the literature. The patient's history did not disclose any unusual information with the exception of that to be expected in miscarriage in the fifth month. Had the placenta not been inspected, the free development of the fetus outside the sac in the uterine cavity would have been overlooked. A marginal placenta is common in such cases.

Endocrine Disturbanees Simulating Kidney Disease.—In the first case reported, the presence of edemas, petechial hemorrhages, ecchymoses, bleeding from the gums, headaches and vasomotor disturbances had led to a diagnosis of renal disease. A salt-free diet was prescribed. Hemorrhage after the removal of a tooth yielded to the use of calcium chloride and thyroid. Thyroid extract was then tried and all the symptoms disappeared. The second case was similar.

Archiv für klinische Chirurgie, Berlin

149: 1-212 (Dec. 8) 1927

Postoperative Thrombosis and Embolism. L. Schönbauer.—p. 1.
Treatment of Fracture of Femur. Deubner.—p. 12.
Late Results with Cartilage Transplantation. A. Mannheim and B. Zypkin.—p. 31.
Meniscus Injuries of Temporomaxillary Joint Resulting in So-Called Anterior Dislocation. F. Lotsch.—p. 40.
*Embolectomy. J. J. Dschanelidze and S. W. Ogloblina.—p. 55.
Lymphogranulomatosis of Digestive Tract. T. Pissarewa.—p. 75.
Pocket Formation in Mesosigmoid with Bowel Incarceration. H. Siegmund.—p. 92.
*Carbohydrate Variations and Operative Trauma. E. Schneider.—p. 99.
Myeloma and Prevention of Accidents. M. Laesecke.—p. 123.
Mechanical and Functional Ideas in Surgery. E. Liek.—p. 130.
Acceleration of Wound Healing Through Action of Embryonal Juices and Proteoses of Hen. S. Kiaer.—p. 146.
Case of Congenital Lack of Development of Gallbladder with Stones in the Common Duct. F. Ishiyama.—p. 183.
Resection for Carcinoma of Cardia. J. Miyagi.—p. 187.
Disturbances of Gastric Secretion in Chronic Diseases of Pancreas. J. Miyagi.—p. 194.
*Extrahepatic Bilirubin Formation. R. Soejima.—p. 206.

Embolectomy.—Dschanelidze and Ogloblina report two cases and review the literature of the subject of embolectomy. It appears from their research that the first attempt in this direction was made by a Russian surgeon, Ssabanejeff, in 1895. The first successful embolectomy however was performed by Labey in 1911. At the present moment the operation seems to have given its best results in Sweden. Out of 109 cases collected from the literature, seventy-four were performed in that country. This incidence is not due to any special predisposition to embolism and thrombosis in Sweden, but to the advocacy by Einar Key for the earliest possible operation. The diagnosis of the condition is easy, the clinical picture of the ischemic phenomena is clear-cut. It is the most urgent of all urgent operations and should be carried out as early as possible with the view of not only saving the life of the patient, but the extremity as well.

Carbohydrate Variations and Operative Trauma: Physiology of Blood Sugar in Surgery.—Schneider calls attention to the appalling mortality in operations on patients with acidosis. He feels that improvement in results should be sought in the study of metabolism rather than in trifling modifications of operative methods. As a result of his studies, he believes that blood sugar level in surgical patients bears a definite relation to the acid-base content. This, of course, does not include cases of diabetes, in which blood sugar is primarily influenced by the pancreatic secretion. In the former group, the hyperglycemia is of secondary nature. Patients with acidosis have their metabolism further impaired by operative trauma. Patients who do not show any disturbance of the acid-base balance cope with the acidosis incident to operative trauma very well. Their blood sugar level does not rise. The diffusible blood sugar content measured by Glassmann's method shows an increase in the presence of an increased acid content of the body. This sugar is split off from the albumins and proteins of the plasma. This process is particularly marked in diabetics because of the failure of the pancreatic hormone. At present, the estimation of the acid-base content and of the carbohydrate metabolism do not gauge the toxic influences and the trauma incident to operative procedures.

Extrahepatic Bilirubin Formation.—Soejima found that normal human blood serum always reacts positively in the van den Bergh test. He had also established that bilirubin is formed in wound secretions. Bilirubin was found to be present in a hematoma. Exposure of blood to air and introduction of germs from the air into normal blood resulted in acceleration of bilirubin formation. He also found that the blood in the splenic veins of cases of Banti's disease contains more bilirubin than the blood from the splenic arteries. Hyperbilirubinemia of Banti's disease has its origin in the spleen, as is confirmed by the fact that the bilirubin blood content in these patients returns to normal a few days after splenectomy. In comparative studies of phenylhydrazine sensitiveness and intoxication in dogs with and without the spleen, a marked difference was noted in the time required for bilirubin formation. Normal animals showed more intoxication than splenectomized animals. Evidently in phenylhydrazine icterus, bilirubin is formed to a great extent

independently of the liver, through a hemolytic process in the spleen. Experiments with injection of hemolyzed blood into the splenic artery resulted in bilirubin formation. A positive van den Bergh reaction, solubility in alcohol and colorless alcohol-serum albumin precipitation differentiate extrahepatic from obstructive icterus. Hyperbilirubinemia accompanying local bilirubin formation can be differentiated from physiologic bilirubinemia by the solubility of its bilirubin in alcohol. The postulate of Minkowsky and Naunyn that without the liver there can be no bilirubin is faulty. On the contrary, we must return to Virchow's idea that bilirubin can be formed anywhere in the body.

Beiträge zur klinischen Chirurgie, Berlin

141: 193-388, 1927

*Acute Suppurative Pericarditis. P. Albrecht.—p. 193.
Operative Treatment of Congenital Funnel-Shaped Thorax. W. Hoffmeister.—p. 215.
Improvement in Hand Disinfection. P. Pitzen.—p. 224.
Study of Twins with Cleft Lip, Jaw and Palate from Standpoint of Heredity. W. Birkenfeld.—p. 257.
Fat Embolism. H. G. Zwerg.—p. 268.
Congenital Esophageal Stenosis: Successful Operation. E. Kraas.—p. 281.
*Pathology and Surgery of Gaucher's Disease. A. W. Fischer.—p. 290.
*Surgical Treatment of Angina Pectoris. E. Hesse.—p. 321.
*Anatomic Study of Ischemic Contracture of Muscle. W. Schulze and H. Eitel.—p. 339.
Internal Incarceration Caused by Fixed Meckel Diverticulum. R. Stohr.—p. 353.
Value of Water and Medicaments in Ointment Base. C. B. Strauch.—p. 358.
*Internal Male Pseudohermaphroditism, Cryptorchism and Congenital Inguinal Hernia. H. von Seemen.—p. 370.

Acute Suppurative Pericarditis.—Acute suppurative pericarditis may arise as a result of infection through direct injury, or of extension of infection from neighboring organs, such as the pleura, lungs, mediastinum and esophagus. An abscess has been known to perforate in the case of esophageal carcinoma and of tuberculous lymph nodes. Inflammation of the myocardium may involve the pericardium. Hematogenous infection of the pericardium in pyemia is relatively frequent. Rarely the pericardium may become infected by way of lymphatic extension. Such was the mode of infection in the case observed by the author. In this case, the projectile had traversed the right lung and lodged in the posterior mediastinum. An infected hemothorax on the right side resulted, from which the patient recovered in three weeks. One week later, he began to complain of cardiac distress. Two days after readmission to the hospital, pericardial effusion increased very rapidly and the patient presented a striking picture of the effect of pressure on the heart: great agony, bulging eyes, cold sweat, cyanosis, marked dyspnea, dilation of the nostrils and imperceptible pulse. Pericardiotomy was performed under local anesthesia. A considerable quantity of pus escaped, but the bullet could not be located. A drain was inserted into the outer angle of the pericardium, the most dependent point. A rapid and uneventful recovery followed. The case is interesting because it demonstrates the possibility of extension of infection by the lymph channel; in this instance, from the lymphatics of the lung to the pericardium. It bears witness to the advantages of early operation. Puncture of the pericardium is the surest diagnostic method. When the operation of pericardiotomy cannot, for some reason, be carried out, paracentesis pericardii becomes a life-saving procedure. The safest method is to introduce the trocar in the angle made by the articulation of the seventh rib with the sternum, directing it upward and slightly outward. Rehn advises preliminary puncture with a fine needle. In the author's second case the bullet had entered and lay free in the pericardial sac. Pericardiotomy and removal of the missil were performed, principally because of signs of effusion in the pericardial sac.

Pathology and Surgery of Gaucher's Disease.—Diagnosis of Gaucher's disease is made by histologic examination of the removed spleen. Bone marrow puncture is an adjuvant. The combination of bone foci and splenic enlargement justifies the diagnosis of Gaucher's disease. Involvement of the head of the femur and of vertebral bodies is of importance in differentiation from Perthes' disease and from tuberculous spondylitis. The author's studies of microscopic preparations support Pick's view that Gaucher cells are derived from reticulum and from the clasmatocytes of arterial adventitia and not from sinus endothelium. The disease is regarded as a metabolic disturbance with deposition of Gaucher substance (kerasin of Lieb-Epstein) in the spleen, liver, lymph glands and bone marrow. It is noteworthy that after splenectomy this substance may continue to be produced in the bone marrow. The study of postoperative results revealed an appreciable number of cures, as well as cases in which bone destruction developed. The results of forty-one splenectomies were studied. There were eight deaths. Less than 50 per cent of the patients who survived were apparently cured for from one to thirteen years. In ten, the operation was a failure. In spite of poor results, splenectomy remains the only effective measure in the control of the hemorrhagic diathesis. Patients with marked bone involvement should not be splenectomized.

Surgical Treatment of Angina Pectoris.—In four of the author's eight patients, operation brought complete and lasting freedom from attacks. Three died and in one no improvement was noted. He studied 127 surgical cases reported in the literature, together with his own eight cases, and sums up the modern status as follows: (1) The operation gives good results in 65 per cent of cases, indifferent results in 17 per cent, and a mortality of 13 per cent. One half of the fatal cases are to be attributed to heart failure. The greatest mortality resulted from complete sympathectomy. Ten patients died later from progression of the disease. In twenty-seven cases a permanent and excellent result was observed for from six months to nine years. (2) Partial sympathectomy gave 62.6 per cent of cures, as compared with 56 per cent obtained with complete sympathectomy. Results were unsatisfactory in 9 per cent, as compared with 18 per cent from total extirpation. Experimental as well as clinical observations seem opposed to complete sympathectomy for angina pectoris. In his opinion, superior cervical sympathectomy under local anesthesia gives the best results. Removal of the stellate ganglion is poorly borne by a degenerated heart. Superior cervical sympathectomy gave 80 per cent of successes and a mortality of only 10 per cent. (3) The operation of isolated depressorectomy is not to be recommended, because the nerve itself is inconstant in location and the results are poor. It is better to combine superior cervical sympathectomy with depressorectomy. The author's experience speaks for the efficiency of sympathectomy. In two patients operated on under local anesthesia during an attack, he observed cessation of pain on section of the sympathetic. (4) Complete extirpation of the superior cervical ganglion was followed by facial neuralgia in 36 per cent of cases. To avoid this unpleasant complication the author advises his method of sectioning the ganglion in the center, slightly above the origin of the superior cardiac nerve leaving the upper half undisturbed. (5) Sympathicotonic angina pectoris is differentiated into a right and a left sided variety, each to be combated by operation on the corresponding side. Angina of bilateral origin calls for bilateral sympathectomy, to be carried out, however, in two stages. The operation is recommended for severe cases in which internal treatment has brought no relief. Complete decompensation, myocarditis and heart failure are contraindications to operation. The operation is not contraindicated in beginning coronary occlusion or in syphilitic aortitis. With the latter, however, operation should be resorted to only after failure of antisyphilitic treatment.

Anatomic Study of Ischemic Contracture of Muscles.—The musculature of the arm in a child is poorer in blood vessels than in an adult. The collateral circulation of the flexors of the forearm was shown by anatomic study and injections to be less competent than that of the extensor muscles. These causes explain the more frequent occurrence of ischemic contractures in the young and the greater vulnerability of the flexor muscles.

Internal Pseudohermaphroditism, Male Cryptorchism and Congenital Inguinal Hernia.—Von Seemen reports the case of a male, aged 18, of normal masculine habitus and well developed secondary sexual characteristics, who presented cryptorchism of the right side and a congenital inguinal hernia on the left. When, at operation, the hernial sac was

opened, a testis, epididymis, uterus with the broad ligament and left fallopian tube were found. Further exploration demonstrated the presence, on the right side, of the right testis, a tube with fimbriated end and a broad ligament. There was a well developed uterine artery. Both tubes were patent and the uterus continued into a patent vagina. The case belongs to the rare type of internal masculine pseudohermaphroditism.

Klinische Wochenschrift, Berlin

7: 1-48 (Jan. 1) 1928. Partial Index

Characteristics of Cancer Cells in Vitro. A. Fischer.—p. 6.
*Diagnosis of Pregnancy from Urine. S. Aschheim and B. Zondek. —p. 8.
Correlative Changes in Human Pituitary. W. Berblinger.—p. 9.
Acidity of Skin Surface. H. Schade and A. Marchionini.—p. 12.
Attempts at Surgical Treatment of Diabetes. G. Mansfeld.—p. 14.
*Mechanism of Acid Alkali Regulation in Normal and Disturbed Renal Function. M. Rosenberg and A. Hellfors.—p. 16.
*Paroxysmal Hemoglobinuria and Blood Groups. E. Witebsky.—p. 20.
Action of Ergotamine. E. Stahnke.—p. 23.
Genesis of Diabetic Hyperglycemia. E. J. Lesser.—p. 25.

New Test for Early Pregnancy.—This test consists of injection of from 1 to 2 cc. of morning urine into young mice and noting the effect on the ovary. Castrated adult mice are used as controls. In pregnancy the urine contains a large amount of the hormone of the anterior lobe of the pituitary, and if the urine injected is from a pregnant woman, the young mouse ovary will exhibit the effects of the hormone. Aschheim and Zondek applied the test in seventy-eight cases of pregnancy. It was unquestionably positive in seventy-six and positive on the second test in one of the remaining two. By this method it was possible to diagnose pregnancy as early as five days after the first missed menses. In 236 controls, the reaction was weakly positive in three cases of severe endocrine disturbances (myxedema and acromegaly) in one fifth of the cases of genital carcinoma, and in two persons without demonstrable endocrine disturbance or cancer —a woman, aged 47, and a man.

Mechanism of Acid-Alkali Regulation in Normal and Disturbed Renal Function.—Rosenberg and Hellfors found that the absence of the expected increase in the hydrogen ion concentration in the urine in persons with renal insufficiency after peroral administration of alkali, previously demonstrated by them, is due to disturbance in the acid-alkali exchange between tissues and blood. Presumably, the administered alkali is retained by the tissues. They determined further that in persons with properly functioning kidneys, the urinary ammonia curve falls steeply when the system is loaded with fixed alkali, whereas, in persons with renal insufficiency, its course is either entirely irregular or upward. The explanation of this paradoxic behavior is, presumably, that in the tissues of the azotemic organism, impoverished of its alkali, the administration of fixed alkali results in setting free ammonia that has been used in the tissues for the neutralization of acids.

Paroxysmal Hemoglobinuria.—Witebsky's researches showed that the hemolytic action of the serums of patients with paroxysmal hemoglobinuria is not group-specific. The hemolytic agent was effective on the cells of all the blood groups. He further demonstrated that the hemolytic antibodies in paroxysmal hemoglobinuria are not identical with the lipoid bodies that give the Wassermann reaction.

Monatsschrift f. Geburtshülfe u. Gynäkologie, Berlin

77: 389-458 (Dec.) 1927

Value of White Streaking in Epinephrine Test for Early Diagnosis of Pregnancy. O. Muck.—p. 389.
External Examination in Judging Progress of Labor. P. Baumm.—p. 392.
Rectal or Vaginal Examination in Obstetrics and Gynecology. G. H. Schneider.—p. 401.
*Idiopathic Diarrheas of Pregnancy. L. Seitz.—p. 410.
*Pure Mitral Stenosis and Pregnancy. O. Gerich.—p. 413.
Carcinoma of the Bladder in Pregnancy. B. Waser.—p. 423.
*Cesarean Section in Infected Cases of Placenta Praevia. V. S. Galkin. —p. 428.
*Culture of Human Placenta. W. Neuweiler.—p. 437.
Intracranial Hemorrhage Consequent on Intra-Uterine Asphyxia. E. Poeck.—p. 442.

Idiopathic Diarrheas of Pregnancy.—Seitz cites two cases to show that diarrhea may occur in pregnancy on a basis similar to that of vomiting, the difference being that in the former instance the vegetative nerves in a condition of hyperexcitability are in the intestine rather than the stomach.

Pure Mitral Stenosis and Pregnancy.—The views of gynecologists regarding pregnancy with pure mitral stenosis are in need of revision, Gerich affirms. He himself saw three pregnancies (two in one woman) safely completed and the mothers pass through an undisturbed puerperium in the presence of this lesion.

Cesarean Section in Infected Cases of Placenta Praevia.—In a case of placenta praevia complicated by severe infection of the uterus, Galkin did a classic cesarean section with longitudinal incision of the anterior wall of the uterus, and, after closure of the uterine wound, performed ventrofixation of the uterus with the uterine wound outside of the peritoneum. The anterior wall of the uterus was brought into the abdominal wound and the edges of the parietal peritoneum were sutured to the anterior surface of the uterus. The abdominal wound was closed as usual. The postoperative course was rough, with much suppuration, but the peritoneum was spared and the patient recovered.

Experiments in Culture of Human Placenta.—Neuweiler found that the stroma grew first. Its growth was typical and was followed by that of the Langhans cells. The syncytium did not appear to take part in the growth.

Monatsschrift für Kinderheilkunde, Leipzig

37: 1-96 (Oct.) 1927

Syringomyelia in Child Aged Eleven. E. J. Bermann.—p. 1.
*Congenital Syphilis and Tests of Liver Function. A. Salomon and L. Schoenthal.—p. 15.
Spasmus Nutans and Nystagmus. G. Knoller.—p. 21.
Seasonal Variations in Weight at Birth. H. Abels.—p. 33.
*Effect of Duration of Cooking on Nutritive Value of Foods. F. von Graevenitz.—p. 36.
Punctate Eruption with Scabbing Following Bathing in Water Containing Potassium Permanganate. B. Epstein.—p. 41.
*Stenosis of Pylorus in Infants; Treatment. N. Seifert.—p. 45.

Congenital Syphilis and Tests of Hepatic Function.—In thirteen children, aged from 1½ to 13 months, with congenital syphilis, Salomon and Schoenthal noted the blood bilirubin curve before and after energetic treatment with neoarsphenamine, for the purpose of determining liver function. They failed to note any rise. This was taken to mean that liver function was normal; hence the treatment is justified.

Effect of Duration of Cooking on Nutritive Value of Foods.—Von Graevenitz does not agree with Friedberger that prolonged cooking lessens the nutritive value of food.

Treatment of Stenosis of the Pylorus in Infants.—Of thirty-four cases of stenosis of the pylorus reported by Seifert, nine were treated conservatively and twenty-five surgically by the Weber-Rammstedt method. Of the first mentioned group seven children died. In the second group the typical pyloric tumor was present in twenty-three cases. Operative treatment is preferable to medical treatment. Early operation prevents inanition; late operation shortens its duration. Dietetic treatment is useful only in mild cases in which considerable improvement occurs within two weeks after the institution of the treatment.

37: 97-192 (Nov.) 1927

Psychology of Childhood. J. S. Galant.—p. 97.
Permeability of Meninges: Permeability of Blood-Brain Barrier in Children. W. A. Leonow.—p. 112.
Familial Progressive Cerebral Diplegia and Congenital Cataract. O. Herz. —p. 135.
Acute Insufficiency of Liver in Childhood. H. Lenhartz.—p. 139.
*Autopyotherapy of Empyema of Infants. H. Flesch.—p. 149.

Autopyotherapy of Empyema of Infants.—In a child, aged 8½ months, Flesch effected a cure of an empyema by resorting to Makai's method of injecting subcutaneously pus withdrawn from the suppurating focus. The whole right pleural cavity was filled with pus. The child's condition was bad. Thirteen punctures were made at four and a half and six day intervals, over a period of eight weeks. Each time from 0.25 to 1 cc. of pus was injected into the back. Complete recovery resulted without any other treatment. In a second case, in a patient, aged 6½ months, nine injections were made in a period of five weeks. In both cases the pus disappeared from the pleural cavity.

Münchener medizinische Wochenschrift, Munich

74: 2207-2226 (Dec. 30) 1927. Partial Index

Forced Feeding Combined with Insulin. E. Wiechmann.—p. 2207.
*Life Centers in Thalamencephalon. P. Högner.—p. 2209.
Perfecting the Gastroscope. R. Korbsch.—p. 2210.
*Early Diagnosis of Uterine Pregnancy. G. L. Dawydoff.—p. 2211.
*Experimental Proof of Thermic Skin Visceral Reflex. E. Freude. —p. 2211.
*Iodoform Treatment of Exudative Pleuritis. D. Kirschenblatt and B. Nasarjan.—p. 2213.
Lacerated Biceps and Accident. Ewald.—p. 2214.
Cases of Abdominal Tumor with Twisted Pedicle. E. Baumann.—p. 2215.
*Case of Carcinoid of Appendix. S. Genz.—p. 2216.

Life Centers in Thalamencephalon.—The disturbances of function cited, which appear in diseases accompanied by rise of pressure in the third and fourth ventricles, convince Högner that the vital centers are actually situated in these cavities, and that through them the life processes are preserved and regulated.

New Method for Early Diagnosis of Uterine Pregnancy.—Dawydoff describes a gynecologic examination in which he uses both hands by turns. The right hand within the vagina is best for examining the right half of the lesser pelvis and its contents; the left hand within the vagina for examining the left half of the lesser pelvis. He introduces two fingers of the examining hand so as to get a clearer idea of the circumference of the uterus, because the middle finger can reach the deeper parts and because with two fingers it is easier to press down the perineum. The right hand is doubtless more sensitive than the left, and hence by palpating the uterus through the abdominal wall with the right hand (with internal examination with the left hand) the circumference of the uterus seems greater, while the right hand palpates a greater number of points in the uterus than when this hand is introduced into the vagina.

Experimental Proof of Thermal Skin Visceral Reflex.—The effects on the stomach of cutaneous thermal irritation can be observed in a few moments by means of the fluoroscope. Tension of the wall, as well as movement, is altered. The effects of warming the abdominal skin varies with the type of stomach: for example, in an orthotonic and hypertonic form, a real increase of tonus and a long-waved, high, discharging peristalsis with frequent opening of the pylorus may be produced. Cooling causes the opposite effect in these stomachs; that is, diminution of wall tension and checking of movement. Reactions in other types of stomach are discussed.

Iodoform Treatment of Exudative Pleuritis.—The authors treated more than thirty cases of exudative pleuritis with intrapleural injections of iodoform. The results (which are tabulated for twenty cases) convince them that this method is the speediest and best. In nearly all cases, and especially in the tuberculous, a severe febrile reaction appeared after the iodoform injection and lasted from two to four days. Resorption of the effusion followed. In no case did the serous effusion become purulent during treatment and cloudy effusions always became clearer. In some cases, with normal temperature and good general condition, indurations developed. Iodoform should be used as early as possible in pleural empyema as a remedy which may obviate resection.

Case of Carcinoid of Appendix.—A man, aged 27 years, whose case was diagnosed by Genz as a subacute inflammation of the cecum, was found to have a carcinoid of the appendix. This condition is practically impossible to diagnose. The disease may appear at any age except in early childhood. It is most frequent in the second and third decades. It is generally benign.

75: 1-72 (Jan. 6) 1928. Partial Index

Teaching Percussion. F. Müller.—p. 6.
Infection and Tumors. M. Borst.—p. 11.
Paralysis of Diaphragm from Combined Syphilis and Tuberculosis. C. Bäumler.—p. 14.
*Diagnosis and Treatment of Coronary Sclerosis. P. Morawitz and M. Hochrein.—p. 17.
Diastolic Capacity of Ventricle. F. Moritz.—p. 21.
Protective Vaccination Against Typhoid. R. Stintzing.—p. 25.
Speed of Blood Current in Arm in Artificial Anemia. A. Bier.—p. 27.
Is Blood Transfusion Indispensable in Hospital Treatment? A. von Eiselsberg.—p. 29.
Effects of Introducing Urine into Blood Stream. Enderlen, Zukschwerdt and Feucht.—p. 30.
Spinal Injury in Prehistoric Times. H. Helferich.—p. 31.
Arthritis Deformans and Surgery. F. König.—p. 32.
*Results of Dietetic Treatment of Tuberculosis. F. Sauerbruch and A. Herrmannsdorfer.—p. 35.
Silk Tendons and Ligaments. F. Lange.—p. 39.
Obstetrics in Last Seventy-Five Years. A. Döderlein.—p. 42.
Silent Active Immunization. M. Pfaundler.—p. 45.
Venereal Diseases and Marriage License. L. von Zumbusch.—p. 51.

Diagnosis and Treatment of Coronary Sclerosis.—The conclusions of Morawitz and Hochrein are based on 137 necropsies. They find coronary sclerosis much more frequent than angina pectoris. About 75 per cent of patients found to have extensive coronary sclerosis had never presented subjective heart disturbances. Angina pectoris was seen almost exclusively with coronary sclerosis. In only two cases was the aorta alone diseased. Pain in angina pectoris apparently depends on several conditions, the most important probably being anatomic disease of the coronary vessels. In the large group of cases of coronary sclerosis without angina pectoris, cardiac asthma and fall in blood pressure or other appearances of heart weakness must be considered as giving an unfavorable prognosis. The authors advise intermittent digitalis treatment, sometimes combined with intravenous strophanthin injections. A complex mercury compound in intramuscular injections has also been used. Dextrose injections and a mixture of papaverine hydrochloride with antipyrine have also been used by the authors with good results. Intestinal meteorism in coronary sclerosis should receive the same treatment as in fermentative dyspepsia.

Results of Dietetic Treatment of Tuberculosis.—The series of 184 cases of tuberculosis treated by Sauerbruch and Herrmannsdorfer included twenty-three cases of lupus and skin tuberculosis, forty-five of tuberculosis of the bones and tissues and 116 of pulmonary tuberculosis. The effect of diet is most evident in external tuberculosis (lupus and skin tuberculosis, tuberculosis of glands and soft parts, urogenital and bone tuberculosis). Of the patients with pulmonary tuberculosis, forty-three were not observed long enough, thirty-five were very much improved, some returning to work, twenty were improved but still needed treatment, eleven were unimproved and seven died. The diet used (Gerson's) must have some special advantage, as it is poorer in calories than those used at the sanatoriums. One hundred and forty-six patients gained in weight, 132 from 1 to 40 pounds, fourteen from 41 to 77 pounds.

Strahlentherapie, Berlin

27: 197-392, 1927

*Influence of Roentgen Irradiation on Blood Sugar. J. Rother.—p. 197.
Roentgen-Ray Biology of Normal and of Diseased Skin. G. Miescher. —p. 257.
*Irradiation Treatment of Myoma. P. Strassmann.—p. 281.
Vomiting After Roentgen-Ray Irradiation. F. Burgheim.—p. 297.
Radiotherapy in Conjunction with Dextrose Injections. E. Mühlmann. —p. 306.
Modification of Erythema and of Pigment Formation Through External Factors. R. Stahl and G. Simsch.—p. 311.
Exact Determination of Roentgen-Ray Units. H. Küstner.—p. 331.
Erythema Dose as Biologic Measure of Action of Rays. K. W. Hausser and E. Schlechter.—p. 348.
Dosage with Sabouraud Table from Viewpoint of Aluminum Filtration. V. Wucherpfennig.—p. 353.
Relation of Roentgen-Ray Unit to Sabouraud Unit. L. Grebe and W. Bickenbach.—p. 358.
"Foundation of Biologic Irradiation." F. Dessauer.—p. 364.
Comment on Above. H. Holthusen.—p. 382.
Effect of Usual Dirt on Window Glass on Penetration of Ultraviolet Rays. W. Hausmann and O. Krumpel.—p. 386.
History of Mild Raying. L. Freund.—p. 389.

Experimental Study of Influence of Roentgen-Ray Irradiation on Blood Sugar.—Rother, in his careful investigations of the biologic reactions of roentgen-ray irradiation on a living organism, attempts to elucidate the phenomenon of blood-sugar rise. The so-called indirect effects of roentgen rays are well recognized and are supposed to be the result of decomposition products of a toxic nature. These enter the circulation and thus influence the reactions in question. The exact nature of these substances has not been determined. Is the experimental hyperglycemia following radiation the result of increased epinephrine secretion? This effect, as well as the increase of sugar in the liver exposed to the action of rays, takes place, provided the splanchnic nerve connections are not severed. A liver removed from the body of an animal and

perfused with blood did not react to radiation by rise in sugar content. The same inhibitory effect could be produced by injections of ergotamine, a nerve toxin. Apparently, the vegetative nervous system is indispensable to this phenomenon. The theory of decomposition toxins as a result of a direct action of rays is not substantiated by his experiments. On the other hand, the indispensability of the vegetative nervous system connections in the phenomenon of blood-sugar rise supports Zondek's theory of the colloidal electrolytic nature of cells. Stimulation of colloidal electrolytes by roentgen rays is the more plausible explanation of the reaction in question.

Irradiation Treatment of Myoma.—The author reviews cases of uterine myoma treated in his clinic during an eight year period, 1918 to 1926. In all there were 1,032 patients. Five hundred and three of these were treated by irradiation with roentgen rays, and 529 were subjected to operation. In the follow-up study the author was able to investigate 396 women belonging to the first group. The results were as follows: There was not a single mortality. Three hundred and sixty-seven, or 92.7 per cent, were cured. Twenty-nine, of 7.3 per cent, of these had to be operated on later for the following reasons: Seventeen had submucous myomata; in four, in addition to myomas, there were ovarian tumors; in three the myoma had undergone sarcomatous degeneration; in two there was a necrotic myoma; in one a calcified myoma and in one diffuse adenomatosis of the uterus. Out of the 529 patients operated on, nineteen died, giving a mortality of 3.6 per cent. Five deaths were due to pneumonia, four to embolism, five to peritonitis, two patients died of ileus, two of a myomatous heart, one of sepsis, the result of a necrotic myoma. It appears from his results that at least one half of all patients suffering from uterine myoma are amenable to cure by roentgen-ray irradiation. The two methods are not in competition with each other. There exist definite indications for each. Because of absence of mortality roentgen-ray irradiation is the treatment of choice in suitable cases.

27: 393-602, 1927

*Roentgen-Ray Irradiation of Exophthalmic Goiter. P. Krause.—p. 393.
Effect of Irradiation on Heart Function. H. Zwaardemaker.—p. 413.
*Radiotherapy of Cancer of Uterus. D. den Hoed.—p. 426.
Fate of Cervical Carcinoma Treated by Irradiation. W. Lahm.—p. 442.
Effect of Beta Rays on Carcinoma. L. F. Loeb and M. Wreschner.—p. 487.
Interruption of Pregnancy by Roentgen Rays. W. Fürst.—p. 496.
Question of Infraroentgen Therapy as Contrasted with Superficial Irradiation. H. Schreus.—p. 511.
Histology of Infraroentgen Erythema. H. G. Rottmann.—p. 518.
Specific Effects of Roentgen Rays. G. Politzer.—p. 533.
Action of Roentgen Rays on Living Tissue in Vitro. R. Gassul.—p. 545.
French and German Roentgen Units. J. Murdoch and E. Stahel.—p. 561.
Absorption Spectrum of Serum. R. Suhrmann and W. Kollath.—p. 572.
Light Erythema as Influenced by Menstrual Cycle and by Pregnancy. H. Dieterich.—p. 587.
Usefulness of Homogeneous Irradiation in Superficial Therapy. O. Gaertner and G. H. Klövekorn.—p. 597.
Effect of Roentgen Ray on Kidney. G. Gabriel.—p. 601.

Roentgen Irradiation of Exophthalmic Goiter.—Krause made a critical analysis of 1,342 cases treated with roentgen rays. The percentage of cures was 80, that of failures 18. In 5 per cent of the cases the symptoms have become aggravated. These results compare favorably with available surgical statistics. Thus Glasafeld, in a study of 2,032 cases submitted to operation, reports 82 per cent of cures and a mortality of 5.4 per cent. It appears that the results obtained with roentgen-ray irradiation are about as good as those obtained from operative measures. Acute cases characterized by rapid loss of weight, pronounced tachycardia and nervousness constitute very grave surgical risks. It is in these cases that brilliant results are accomplished by careful roentgen irradiation controlled by basal metabolism determination.

Radiotherapy of Cancer of Uterus.—Hoed's report embraces the first ten years of the cancer research institute at Amsterdam. Patients were carefully followed for from seven to twelve years. The following conclusions are drawn: A certain percentage of cases of inoperable cancer of the body of the uterus can be permanently cured by irradiation, provided that there are no metastases and that the neoplasm has not invaded the neighboring tissue to a marked extent. Irradiation of a small field at one time gave better results than the Dessauer method. More recent experience suggests that better results can be obtained from the combination of large doses of radium, from 4,000 to 7,000 mg., combined with a not too powerful exposure to roentgen rays. Operation for cervical carcinoma should be followed by irradiation. Cancer of the body of the uterus should be operated on, if possible. In roentgen rays and in radium we possess a powerful therapeutic agent, capable of accomplishing not only palliation, but a lasting cure, in the type of cases which present contraindications to operation or which are inoperable.

Wiener klinische Wochenschrift, Vienna

40: 1565-1596 (Dec. 15) 1927. Partial Index

Blood Transfusion. N. Jagić.—p. 1565.
Tonsils and Internal Diseases. F. Hutter.—p. 1569.
*Etiology and Therapy of Shoulder Pain. A. Lux.—p. 1573.
*Avoiding Effects in Unvaccinated Children of Family When One Child Is Vaccinated. F. Hamburger.—p. 1575.
Treatment of Chronic Dacrocystitis with Besredka's Antivirus. J. Singer and P. Spitzer.—p. 1576.
*Forming Artificial Vagina in Aplasia of Vagina. M. Köhler.—p. 1577.
*High Child Mortality in Large Families. J. K. Friedjung.—p. 1578.
Spontaneous Correction in Tabetic Ataxia. J. Loewenstein.—p. 1579.

Etiology and Therapy of Shoulder Pain.—Intra-articular diseases of the shoulder joint are rare in comparison to lesions of the periarticular tissue. The latter most frequently involve the subacromial and subdeltoid bursae; they seldom involve the muscles and tendons surrounding the shoulder joint. A sudden contraction of the deltoid, such as occurs in abrupt movement of the arm, is the most frequent etiologic cause. In nontraumatic but acute cases of periarthritis, the lesion is also in the bursa, the infection being carried by the circulation in furuncle, carbuncle, influenza, tonsillitis, etc. The inflammation of the bursa is in general serofibrinous. Calcareous deposits in the bursa may predispose to acute disease. Caries of the teeth and abscesses of the roots may be the causes of acute bursitis. Chronic periarthritis usually comes from an untreated or improperly treated acute bursitis and consists in adhesions between the sheath of the bursa and the joint capsule. Similar adhesions come after long rest of the joint following injury. Shoulder pains occur in diseases of the diaphragm, of the gallbladder, in perforated duodenal ulcers, in pneumonia, with diaphragmatic pleurisy, in neuritis and in cardiovascular diseases. If passive rotation and pendulum movement of the arm are painless, the cause of the pain is periarthritis, because this movement, if carefully performed, takes place only in the joint. If they are painful, it is an arthritis of the shoulder joint. Intra-articular diseases of the shoulder are treated like those of other joints. The author treats acute bursitis as follows: the shoulder is carefully massaged with the palm of the hand and then immobilized in a bandage moistened with a 1:20 hydrogen peroxide solution. The bandage is left in place for from twelve to twenty-four hours and then the procedure is repeated. Usually the pain has so subsided after four or five days that passive movement of the arm is begun. When the acute pain has entirely disappeared and abduction can be performed without pain, hot air and, later, diathermy are used. The symptoms of chronic periarthritis are slight painfulness in the inner side of the upper arm and paresthesias. In a large number of cases, however, these disturbances are absent, although the movement of the scapula with the arm is evident. The shoulder is first treated for about twenty minutes with hot air. Then the adhesions are freed by forcible but careful movements. After this the patient is again treated with hot air or diathermy. From ten to fifteen treatments are given.

Avoiding Effects in Unvaccinated Children of Family When One Child Is Vaccinated.—Four young children and their mother, none of whom had previously been vaccinated, developed vaccine pustules on the eyelids or conjunctiva. The source of this unintentional vaccination was the oldest child, who had recently been vaccinated at school. A physician vaccinating a child should find out whether the other children of the family are already vaccinated. If they are not, or if they have not been vaccinated for more than seven years, he should see that all the children are vaccinated at the same time. Children living in the house with unvaccinated children who have eczema, and hence cannot be vaccinated, should not be vaccinated.

Forming an Artificial Vagina in Aplasia of the Vagina.—Köhler reports the case of a girl with aplasia vaginae and describes the operation, which was that proposed by Schubert in 1911. From the twenty-fourth day, bougies were inserted daily because of the narrowness of the introitus. The vagina retained its size. Its length measured 12.5 cm. There was a slight viscous secretion.

High Child Mortality in Large Families.—One hundred women, whose cases Friedjung chose at random from his records ,had 1,033 pregnancies. Of these, 148 resulted in miscarriage and 330 resulted in children who died young. Of the 100 mothers, eighty-nine lost one or more children. Of twenty-four children of one mother, sixteen died; of nineteen children, twelve, of eighteen children, twelve, of thirteen children, ten, of eleven children, nine, of nine children, seven, of eight children, six, of seven children, six and of six children, three. Friedjung discusses the cause of high child mortality; lack of air, cleanliness and care, disturbed sleep, intimate contact with disease.

40: 1629-1660 (Dec. 29) 1927. Partial Index

Trichinosis; Its Control. G. B. Gruber.—p. 1629.
Experimental Therapy of Barbital Poisoning. F. Gaisböck and W. Ludwig.—p. 1633.
*Insulin in Treatment of Peptic Ulcer. S. S. Simnitzky.—p. 1635.
"Rheumatism Remedies" and Rheumatism Control. E. Freund.—p. 1637.
*Curing General Lipoid Nephrosis with Liver Diet. O. Porges.—p. 1640.
Ballast Material of Vegetable Drugs. L. Kofler.—p. 1641.
Anatomic Preparations in Moving Pictures. E. Pernkopf.—p. 1642.
Pathology of Cerebrospinal Fluid. F. Plaut.—p. 1643. C'cn.
Child Mortality in Large Families. F. Kermauner.—p. 1645.
Reply. J. K. Friedjung.—p. 1645.
Limits of Effects of Swelling Current. S. Ebel.—p. 1645.

Insulin in Treatment of Peptic Ulcer.—Simnitzky treated twelve patients with recent peptic ulcer, six with recurrent ulcer, eight with complicated ulcer. The ambulant patients were allowed their usual diet; the hospital patients, the general diet, the only requirement being the ingestion of 100 Gm. of purée of potatoes at the noon and evening meals. From 10 to 15, sometimes 20 units of insulin were given subcutaneously, totalling 20, 30 and, rarely, 40 units a day. In the first group of twelve patients, insulin therapy produced reversibility in the tonus of the vegetative nervous system. The duration of this favorable effect varies. Of the six patients in the second group four have had no recurrences in nine, eleven, thirteen and fifteen months; one was not followed and one had a recurrence after five and a half months. Results in the third group were also good and in all the patients insulin had a quieting effect on pain.

Treatment of General Lipoid Nephrosis with Liver Diet.—Noting the diuretic effect of the liver diet in a case of pernicious anemia, Porges tried the diet in two cases of cardiac insufficiency with simultaneous hepatic cirrhosis, general edema and severe ascites. After puncture of the ascites, the liver diet seemed to slacken the filling process, although previously all diuretics had failed. It did not succeed in effecting complete drainage. There was great improvement in one case of cachectic edema in secondary anemia, and in one case of alcoholic cirrhosis of the liver and diabetes with slight ascites.

Zeitschrift für klinische Medizin, Berlin

106: 529-806 (Nov. 29) 1927

Testing Hepatic Function by Administration of Bilirubin. W. Eilbott.—p. 529.
Differential Diagnosis of Splenomegalies. N. Henning.—p. 561.
*Forme Fruste of Hemorrhagic Purpura. S. G. Lewit and M. Malkowa.—p. 574.
Monocyte Problem. N. Mosczytz.—p. 582.
*Lymphatic Reaction and Agranulocytosis in Lethal Sepsis. V. Weiss.—p. 617.
Nuclear Shifting and Blood Sedimentation in Diagnosis. M. Chaimoff.—p. 628.
Vitally Staining and Polychromatic Erythrocytes. A. Arrak.—p. 640.
Size of Erythrocytes in Anemias. K. Pohle.—p. 651.
*Hematoporphyrin in Urine in Chronic Lead Poisoning. S. Hirschhorn and W. Robitschek.—p. 664.
Parenteral Absorption of Fats. H. Bernhardt and C. B. Strauch.—p. 671.
*Lipoids of Blood Plasma in Internal Diseases. J. Friesz and G. Szabó.—p. 701.
Influence of Protein Therapy on Intermediary Metabolism. A. Fischer and Krause-Wichmann.—p. 717.
Action of Salt on Diuresis. E. Bloch.—p. 733.
Late Syphilis of Bones and Joints. W. Steinbrinck.—p. 745.
*Importance of Constitution in Cardiovascular Diseases. M. J. Arjeff.—p. 767.
Relations Between Endocrine System and Brain. J. Ratner.—p. 774.
Statistics of 1,838 Cases of Poisoning. E. R. Grawitz and A. Waegner.—p. 783.
Is Herpes an Infectious Disease? J. Plesch.—p. 793.

Forme Fruste of Hemorrhagic Purpura.—From clinical observation and blood examinations in a number of cases of the forme fruste of hemorrhagic purpura, Lewit and Malkowa conclude that it differs from the classic form quantitatively, but not qualitatively. They cite cases showing the transition of the first into the second and vice versa. In seven cases they saw the incomplete and the classic forms in the same family. Their records show a strong preponderance of women over men in all forms.

Lymphatic Reaction and Agranulocytosis in Lethal Sepsis.—A personally observed case (with necropsy) and analysis of forty-one cases from the literature confirm Weiss in the opinion that the lymphatic reaction and agranulocytosis are not independent clinical pictures, but are rare hematologic reactions in severe septic diseases. The nature of the reaction is determined by the condition of the blood-forming organs, which depends on unknown factors. All the patients with a blood picture which, in his opinion, showed agranulocytosis died; all those with a pronounced lymphatic reaction, without injury to the granulocyte system, recovered.

Excretion of Hematoporphyrin in Urine in Chronic Lead Poisoning.—Hirschhorn and Robitschek studied seventy-seven cases of chronic plombism, including fifty reported on by Sternberg, and found hematoporphyrin beyond the normal limits in six. In eleven cases, it was abundant, but within normal limits. There was no evidence that it paralleled the severity of the symptoms, but with a relatively high urinary hematoporphyrin a decrease in the number of erythrocytes and in the hemoglobin percentage was always present. The relations between chronic lead poisoning and hematoporphyria were studied, and the authors conclude that in both chronic lead poisoning and congenital hematoporphyria the hemoglobin released by the increased disintegration of erythrocytes becomes the mother substance of hematoporphyrin.

Lipoids of Blood Plasma in Internal Diseases.—The results of investigations by Friesz and Szabó showed that: The total cholesterol in the blood increases in icterus in cases in which the escape of bile is obstructed without injury to the liver cells, but not in other cases. In cholelithiasis hypercholesteremia is found even when the patient is free from attacks and the bilirubin values are not above normal. Hypocholesteremia is always present in pernicious anemia and in chlorosis. In leukemia the total cholesterol is about normal in amount but the percentage of free cholesterol is below normal. Cholesterol values are normal in thrombopenia and lymphogranulomatosis. They are normal or irregular in cirrhosis and decompensated cardiac defects. Lecithin generally parallels the severity of the symptoms in mechanical, catarrhal and arsphenamine icterus. In pleiochromin icterus, anemia, leukemias, cirrhosis and cardiac defects, lecithin values are normal. The lipoids of the blood do not provide a suitable test of hepatic function.

Importance of Constitution in Cardiovascular Diseases.—Arjeff classified 375 patients with diseases of the cardiovascular system by Pignet's index, and discovered that patients with sclerotic diseases and those with fatty heart were mostly in the hypersthenic group, and that patients with valvular heart lesions and those with cardiovascular neurosis were chiefly in the asthenic group.

Zentralblatt für Chirurgie, Leipzig

53: 129-192 (Jan. 21) 1928

Prolapse of Common Duct. H. Herfarth.—p. 130.
Carcinoma at Junction of Ducts. V. Pliverić.—p. 133.
Apparatus for Application and Removal of Schmerz's Tongs. E. Mühsam.—p. 136.
Exploratory Trephining in Brain Tumors. P. Babitzki.—p. 138.
Extremities After High Ligation of Blood Vessels. O. Frisch.—p. 141.
Plastic Repair of Chin and Mouth Mucosa. W. Smital.—p. 142.
Myoma of Gastro-Intestinal Tract. H. Koch.—p. 145.
*Strumectomy in New-Born Infant. M. Willenbacher.—p. 151.
Specific Lipoid Treatment of Surgical Tuberculosis. W. Drügg.—p. 153.
Operative Cystoscope Without Albarran's Lever. O. A. Schwarz.—p. 156.

Strumectomy in a New-Born Infant. — Congenital hyperplasia and strumous degeneration of the thyroid gland are not infrequent in goitrous regions. Prophylactic administration of iodine to the mother is suggested. These cases call for operative intervention only when pressure on the trachea is causing suffocation. Willenbacher reports a case of tracheal compression in a new-born infant with imminent suffocation. At operation partial resection of both lobes had to be carried out in order to relieve the pressure. An uneventful recovery took place.

Odesskii Meditzinskii Jurnal, Odessa

1-400 (Jan.-June) 1927. Partial Index

Roentgen-Ray Cancer. G. A. Popov.—p. 130.
Diagnostic Errors in Gynecology. G. K. Jivatov.—p. 161.
*Thoracoplasty in Treatment of Pulmonary Tuberculosis. B. E. Stavraki.—p. 207.
Malignant Ganglioneuroma of Suprarenal. N. A. Busni.—p. 261.
*Rhinoscleroma. O. G. Kalin.—p. 307.

Thoracoplasty in Treatment of Pulmonary Tuberculosis.—When artificial pneumothorax fails to bring about collapse, thoracoplasty should be performed without delay. This operation obviates the complications which arise in the course of treatment with artificial pneumothorax, and which in themselves are far more dangerous than the operation.

Rhinoscleroma.—Kalin gives an extensive historical review of the subject and supplements it with his own observations. The following deductions are drawn: Rhinoscleroma is an infectious granuloma characterized by large round cells, hyaline formation and presence of an encapsulated bacillus described by Frisch. The specificity of the Frisch bacillus is supported by a number of immunobiologic reactions, such as agglutination, specific bactericidal property and Bordet-Gengou's complement reaction. The latter, he suggests, may be utilized as a diagnostic aid in more or less obscure cases. Experiments with animals suggest the infectious character of the lesion. Among the etiologic factors are a number of biochemical deviations from the normal, such as a marked increase of calcium in the blood and a relative increase of potassium. The protease of the nasal secretions is also increased. The similarity to ozena in this respect is pointed out. The author believes that the further study of the biochemical properties of the organism and of nasal secretions will elucidate the pathogenesis of this disease and lead to prophylactic measures.

1-56 (Sept.) 1927. Partial Index

Spread of Malaria in Odessa District. G. M. Mittelman.—p. 4.
*Malaria Treatment of Leukemia. K. Anding.—p. 7.
Anatomic Foundation for Epidural Anesthesia. A. I. Charugin.—p. 15.

Malaria Treatment of Leukemia.—The author injected 4 cc. of citrated blood from a case of tertian malaria under the skin of a patient with myelogenous leukemia. During the incubation period, there was noted a marked diminution in the number of leukocytes which decreased still further with each succeeding attack. On administration of quinine and cessation of the malarial attacks, the blood picture slowly returned to the original status. The author thinks that with modification of the method of malaria inoculation, more permanent results will be obtained.

1-100 (Oct.-Dec.) 1927. Partial Index

Malpositions of Uterus. V. D. Brant.—p. 9.
Diagnosis of Hematometra in a Supernumerary Uterine Horn. B. K. Gogoberidze.—p. 23.
Necrosis of Female Genitalia in Acute Infectious Diseases. G. Zomakion.—p. 40.
*Hypnosis in Childbirth. J. Kalachnik.—p. 85.

Hypnosis in Childbirth.—The author reports five cases of childbirth conducted under hypnosis with complete absence of pain. The best results were obtained in two primiparae, in spite of relatively few preparatory seances. In multiparous patients, the labor was painless, but a degree of uneasiness existed. In the author's opinion, hypnosis exercises a salutary influence on the functional phenomena of psychogenic origin not infrequently met with in pregnant women. The effect obtained does not always correspond to the depth of hypnosis. It is possible to secure favorable results with superficial hypnosis.

Vestnik Mikrobiologii i Epidemiologii, Saratov

6: 385-477, 1927

Vaccination Against Tuberculosis by Calmette's Method. Aksiantzev and Zacharov.—p. 385.
Atypical Forms of Bacillus Pestis. A. Bezsonova.—p. 394.
Bacterium Alcaliaromaticum. A. Berlin.—p. 402.
*Sources of Infection with Scarlet Fever Streptococcus. Korobkova and Mitin.—p. 414.
Simultaneous Method of Antirabic Treatment. A. Shaburov.—p. 420.
Migration of Ascaris and of Oxyuris into Intestinal Tumor in Man. C. P. Alfeev.—p. 423.
False Distomiasis in Liver of Man. J. K. Shtrom.—p. 433.

Sources of Infection with Scarlet Fever Streptococcus.—Korobkova and Mitin found *Streptococcus hemolyticus* in the throats of 55 per cent of 118 convalescing patients in the third week, 42 per cent in the fourth, 38 per cent in the fifth week. Patients whose throat cultures yield rich *Streptococcus hemolyticus* colonies possess the greatest possibility for disseminating the infection. Their incidence in the third week of convalescence was 43.5 per cent, in the fourth week 31.5, in the fifth week and later, 29.8 per cent. Skin scrapings yielded a positive result in 37.5 per cent of the cases. Of these, 59 per cent were found in the third week; only 9.2 per cent in the fifth. They also found *Streptococcus hemolyticus* in the throats of 50 per cent of contacts. The air in scarlet fever wards was found to contain considerable numbers of hemolytic streptococci, the result of coughing and sneezing by patients. All the hemolytic streptococcus groups, with exception of one, proved capable of yielding a specific scarlet fever toxin.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

71: 2449-2580 (Dec. 10) 1927. Partial Index

Liver Diet in Pernicious Anemia. C. M. Hoogenboom.—p. 2470.
*Weil's Disease in Sumatra. G. Baermann and E. Smits.—p. 2478.
Intestinal Sand. E. H. B. van Lier and J. der Weduwen.—p. 2495.

Weil's Disease in Sumatra.—Baermann and Smits studied a group of febrile illnesses with spirochetes in the blood, that they found occurring with frequency in a rubber district of Sumatra. They made agglutination tests with known spirochete strains from Europe and conclude that these cases, hitherto classified as spirochaetosis febrilis, are all caused by the spirochete of Weil's disease. The illnesses varied from mild to severe, but the authors regard them as constituting a clinical entity, identical with Weil's disease. Long contact with stagnant water or with mud, either direct or indirect, as through wet clothing, preceded the onset of the disease. It was not shown that rats played any rôle in the dissemination of the infection.

71: 2581-2680 (Dec. 17) 1927. Partial Index

Gynecology and Gynecotherapy. G. C. Nijhoff.—p. 2582.
*Dyspneic Children. D. Herderschée.—p. 2599.
Epilation by Thallium Acetate. D. M. Levy.—p. 2611.
*Pituitary Function. S. Koster.—p. 2612.
Psychanalysis. E. A. D. E. Carp.—p. 2614.

Cause of Dyspnea in Children.—In children the cause of dyspnea need seldom be sought outside the respiratory tract. Among 458 children operated on for stenosis of the larynx, organisms resembling, morphologically, diphtheria bacilli were cultured in 369. Twenty-seven children died before a bacteriologic examination could be made. Other causes of dyspnea discussed by Herderschée are spasms of the larynx caused by foreign bodies, infections and abnormal nervous irritability. Koplik's spots should be looked for, but, if found, the possibility of a coexisting diphtheria must not be forgotten. Herderschée has never seen a case of laryngeal stenosis caused by tuberculosis or syphilis. Abscesses produce stenosis by pressure or collateral edema. Tumors of the mediastinum may cause stenosis by pressure on the recurrent nerve.

Experiments in Function of Pituitary.—Koster found pronounced hypertrophy of the lobus bifurcatus (lobus chiasmaticus, infundibularis, pars tuberalis) in two dogs in which total extirpation and in one dog on which partial extirpation of the pituitary had been performed from two to thirteen and one half months previously. He regards this as proof that the pituitary has an important function.